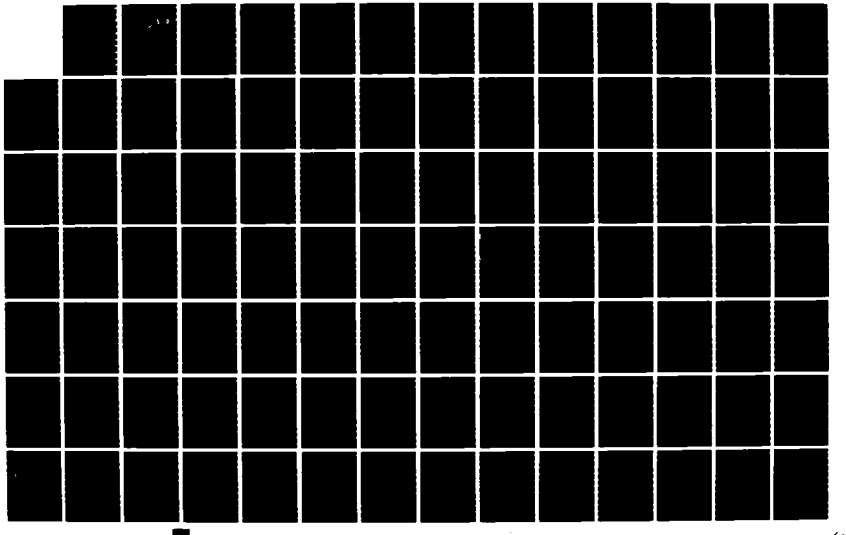
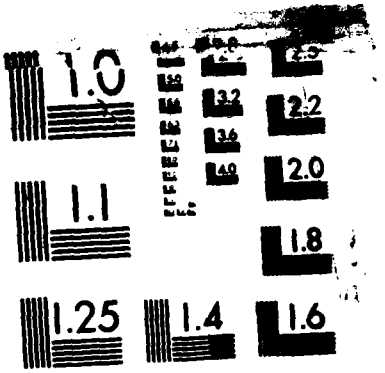
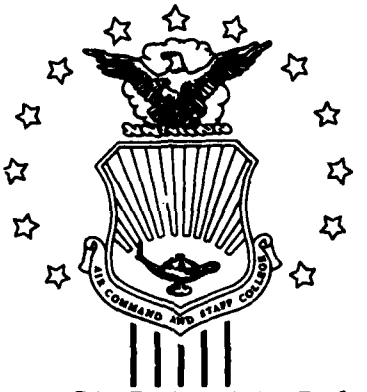
AD-A168 329 A COMPARATIVE ANALYSIS OF JOB ATTITUDES OF MILITARY AIRLIFT COMMAND PILOTS(U) AIR COMMAND AND STAFF COLL MAXWELL AFB AL J C BEDFORD APR 86 ACSC-86-0240 1/2

UNCLASSIFIED F/G 5/10 NL







AIR COMMAND AND STAFF COLLEGE

STUDENT REPORT

A COMPARATIVE ANALYSIS OF JOB ATTITUDES OF MILITARY AIRLIFT COMMAND PILOTS

MAJOR JOHN C. BEDFORD 86-0240

"insights into tomorrow"

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REPORT NUMBER 86-0240

TITLE A COMPARATIVE ANALYSIS OF JOB ATTITUDES OF MILITARY AIRLIFT COMMAND PILOTS

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Submitted to the faculty in partial fulfillment of requirements for graduation.

AIR COMMAND AND STAFF COLLEGE
AIR UNIVERSITY
MAXWELL AFB, AL 36112

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE

AD A168329

REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED	1b. RESTRICTIVE MARKINGS
2a. SECURITY CLASSIFICATION AUTHORITY	3. DISTRIBUTION/AVAILABILITY OF REPORT STATEMENT "A" Approved for public release; Distribution is unlimited.
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE	
4. PERFORMING ORGANIZATION REPORT NUMBER(S) 86-0240	5. MONITORING ORGANIZATION REPORT NUMBER(S)
6a. NAME OF PERFORMING ORGANIZATION ACSC/EDCC — 6b. OFFICE SYMBOL (If applicable)	7a. NAME OF MONITORING ORGANIZATION
6c. ADDRESS (City, State and ZIP Code) Maxwell AFB AL 36112-5542	7b. ADDRESS (City, State and ZIP Code)
8a. NAME OF FUNDING/SPONSORING ORGANIZATION — 8b. OFFICE SYMBOL (If applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER
8c. ADDRESS (City, State and ZIP Code)	10. SOURCE OF FUNDING NOS. PROGRAM ELEMENT NO. — PROJECT NO. — TASK NO. — WORK UNIT NO
11. TITLE (Include Security Classification) A COMPARATIVE ANALYSIS OF JOB	
12. PERSONAL AUTHOR(S) BEDFORD, JOHN C., MAJOR, USAF	
13a. TYPE OF REPORT — 13b. TIME COVERED FROM ____ TO ____	14. DATE OF REPORT (Yr., Mo., Day) 1986 April — 15. PAGE COUNT 103
16. SUPPLEMENTARY NOTATION ITEM 11: ATTITUDES OF MILITARY AIRLIFT COMMAND PILOTS (U)	
17. COSATI CODES FIELD — GROUP — SUB GR	18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

This research supports the Leadership and Management Development Center's request to analyze the USAF Organizational Assessment Package survey results to determine the job attitudes of Military Airlift Command (MAC) pilots. The job attitudes of the MAC pilots are compared to those of other pilots and non-rated officers. A demographic profile is generated for each group and a statistical analysis is performed to determine significant differences between the groups at the 95% level of confidence. Results indicate that MAC pilots tend to be generally less satisfied than the other two groups with their jobs. Specifically, definite improvements are needed in the areas of Management/Supervision and Supervisory Communications Climate.

20. DISTRIBUTION/AVAILABILITY OF ABSTRACT UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT ☐ DTIC USERS ☐	21. ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED
22a. NAME OF RESPONSIBLE INDIVIDUAL ACSC/EDCC Maxwell AFB AL 36112-5542	22b. TELEPHONE NUMBER (Include Area Code) (205) 293-2483 — 22c. OFFICE SYMBOL

DD FORM 1473, 83 APR — EDITION OF 1 JAN 73 IS OBSOLETE

UNCLASSIFIED

PREFACE

The Leadership and Management Development Center (LMDC) was established in an effort to reverse the negative perceptions that a majority of Air Force members held regarding leadership and management within the Air Force. Since 1978, LMDC has focused it's efforts through consultation and research on the improvement of leadership in the Air Force. Unfortunately, in October 1986, the LMDC's research, analysis, and management consultation functions will be dissolved due to manpower cutbacks. At that time, the valuable data base generated by administration of the Organizational Assessment Package (OAP) survey will be transferred to the Air Force Human Resources Laboratory, Brooks AFB, TX. Although data will be preserved, the analysis of the data will receive limited emphasis. There are no plans to continue collecting data at the present time. Consequently, a substantial effort is now underway by LMDC to document the current data. This research project concentrates on the job attitudes of a small but significant element of the Air Force team--Military Airlift Command pilots.

This report conforms to the standards of publication establish and endorsed by LMDC, as based on the style of the American Psychological Association.

ABOUT THE AUTHOR

Major John C. Bedford entered active duty in September 1974 at the Air Force Rocket Propulsion Laboratory, Edwards AFB, CA. He served as a propulsion test engineer, Reentry Vehicle Nosetip Test Facility project engineer, and as Chief of the High Thrust Test Area.

Major Bedford completed Undergraduate Pilot Training in 1979 and was assigned to McGuire AFB, NJ, to fly the C-141 airlifter. While at McGuire, he flew as an instructor pilot and a Prime Nuclear Airlift Force (PNAF) aircraft commander. A Squadron Officer School graduate, he was selected to the Wing Current Operations staff where he became Chief of the Special Assignment Airlift Mission (SAAM) Branch. He was subsequently transferred to Headquarters, Twenty First Air Force at McGuire, also in Current Operations, where he specialized in the SAAM and PNAF mission. Major Bedford accumulated more than 2100 hours in the C-141 before leaving for the Air Command and Staff College.

Major Bedford holds a Bachelor's Degree in Aerospace Engineering from Auburn University and a Master's Degree in Systems Management from the University of Southern California.

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EXECUTIVE SUMMARY

Part of our College mission is distribution of the students' problem solving products to DoD sponsors and other interested agencies to enhance insight into contemporary, defense related issues. While the College has accepted this product as meeting academic requirements for graduation, the views and opinions expressed or implied are solely those of the author and should not be construed as carrying official sanction.

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REPORT NUMBER 86-0240

AUTHOR(S) MAJOR JOHN C. BEDFORD, USAF

TITLE A COMPARATIVE ANALYSIS OF JOB ATTITUDES OF MILITARY AIRLIFT COMMAND PILOTS

I. Purpose: To comprehend the job attitudes of Military Airlift Command (MAC) pilots to determine their attitudinal strengths and weaknesses and to make recommendations on how the weaknesses might be minimized.

II. Problem: Are there significant differences between the job attitudes (as measured by the USAF Organizational Assessment Package--OAP) of MAC pilots and those of other pilots and non-rated officers in the Air Force? If there are, can the causes for the differences be identified and recommendations made to maximize mission effectiveness and retention?

III. Background: A survey by the Air Force Management Improvement Group in 1975 revealed that of the 38,000 people surveyed, 71% felt the quality of Air Force leadership and management ranged from "average" to "poor." In response, General Jones, then Air Force Chief of Staff, created the Leadership and Management Development Center (LMDC) at Maxwell AFB, AL. However, due to manpower cutbacks scheduled in 1986, the LMDC research and management consulting missions will be eliminated. The author, a MAC pilot, offered to selectively research the large OAP data base to specifically document the job attitudes of MAC pilots.

CONTINUED

IV. Analysis: The objectives of the research were fourfold: first, to review relevant background research and organizational behavior literature; second, to compare OAP measured demographic characteristics and job attitudes of MAC pilots with those of other pilots and of non-rated officers; third, to analyze significant attitudinal differences between MAC pilots and the other two groups; fourth, to develop recommendations for MAC organizational commanders and decision makers. The third objective required a statistical analysis to test for possible significant differences among the sample groups. Analysis was performed using the Oneway Analysis of Variance (ANOVA) and Newman-Keuls follow-up at the 95% confidence level.

V. Results: The results of the demographic characterization analysis are presented in Appendix A. No attempt was made to determine statistically significant demographic differences among the groups. Conversely, a statistical analysis was accomplished to determine significant differences in job attitudes among the three sample groups. Eleven of 22 factors were determined to be significantly different for MAC pilots. However, differences on only eight of these factors were considered to be of practical significance for management.

VI. Conclusion: MAC pilots tend to be generally less satisfied with their jobs than other Air Force pilots and non-rated officers. Particularly noteworthy is the conclusion that MAC needs improvement in the areas of management/supervision and supervisory communications.

VII. Recommendations: Five recommendations are offered to help improve the job attitudes of MAC pilots.

1. Establish a level of experienced field grade supervisors just below the squadron chief pilot to provide guidance to the younger company grade officer pilots.
2. Establish a mini-Airlift Operations School indoctrination course at Altus AFB for new MAC pilots.
3. Reduce the number of non-essential additional duties the flying officer must perform. Rely more on NCO administrators.
4. Perform a zero-based study on how we perform training in MAC.
5. Use the OAP data base to compare the job attitudes of all pilots broken out by major command.

Chapter One

INTRODUCTION

> The mission of the United States Air Force is to prepare our forces to fight to preserve the security and freedom of the people of the United States (US Department of the Air Force, p. v).

Preparing forces to fight for security and freedom is an awesome challenge for an organization. Nevertheless, many individuals accept this unique challenge with great enthusiasm. This enthusiastic devotion to perform the mission demands that our leaders and managers be concerned with the morale and well-being of those who dedicate their lives to this vital task. Studies show that job satisfaction and goal achievement are directly related (Herzberg, Mausner, and Snyderman, 1959; Carroll, 1973; Srivastva, et al., 1975). Hence, it is in the best interest of our nation that the Air Force leadership take positive steps to determine and enhance job satisfaction for it's members. To this end, this paper explores the job satisfaction of a small segment of the Air Force team--Military Airlift Command (MAC) pilots.

The MAC pilot group was selected for this research primarily because the author is a MAC pilot. There are several reasons for limiting the analysis strictly to the MAC pilot force versus the MAC rated force. First, the pilot force represents the greatest direct investment for training over any

other duty specialty. Consequently, it suffers the greatest loss of experience due to untimely separations. Because of the training costs and the problem with MAC pilot retention, the job attitudes of pilots are extremely important. Secondly, although rated, a navigator would probably differ in his or her response to the survey. This bias would provide inaccurate data to any pilot retention study effort. Equally important is the declining need for MAC navigators due to the advanced navigation equipment in aircraft like the C-5 and the C-17.

Before exploring job attitudes of MAC pilots, it is important to review recent Air Force actions taken in the job satisfaction arena. When General David C. Jones was the Air Force Chief of Staff, he established the Air Force Management Improvement Group (AFMIG) in April 1975 to better understand what would make the Air Force more satisfying. The group was charged with examining numerous aspects of Air Force life and making recommendations on how service life could be improved. A survey by the AFMIG indicated that while 81% of the 38,000 people polled felt leadership and management were important, 71% of them felt the quality of the Air Force leadership and management fell in the range from "average" to "poor." As a result of this finding and subsequent recommendations by the AFMIG, General Jones created the Leadership and Management Development Center (LMDC) located at Maxwell AFB, AL (Mahr, 1982).

In part, the mission of LMDC includes (a) providing

consultative services to Air Force commanders, (b) providing feedback to professional military education schools, and (c) establishing a data base in support of Air Force-wide organizational effectiveness research efforts (Hendrix and Halverson, 1979; Short, 1985). The survey instrument used to assess job satisfaction, the Organizational Assessment Package (OAP), was developed jointly by LMDC and the Air Force Human Resources Laboratory, Brooks Air Force Base, Texas. Since its' creation in 1978, it has been administered to approximately 300,000 people within all of the Air Force's major commands and at almost every organizational level.

Unfortunately, the LMDC's Directorate of Research and Analysis (LMDC/AN) and Directorate of Management Strategies and Education (LMDC/MC) will be dissolved (due to manpower constraints) effective 1 October 1986. Meanwhile, the tremendous wealth of information contained in the LMDC OAP data base has yet to be fully analyzed. In an effort to minimize the impact of the manpower reductions, LMDC/AN has sought the assistance of Air Command and Staff College researchers to analyze portions of the data base and to document findings for future consideration. Having spent the majority of his 11 years in the Air Force as a Military Airlift Command pilot and staff officer, the author accepted the challenge to document the OAP results for MAC pilots in the hope that the research would benefit MAC commanders and future Air Force researchers.

The primary mission of the Military Airlift Command (a

specified command) is the strategic and tactical deployment of combat forces and equipment, employment operations, and logistic support (US Department of the Air Force, p. 3-5). This mission is accomplished through the employment of approximately 1000 aircraft, ranging from the USAF's largest heavy airlifter, the C-5, to various types of helicopters. In addition to the massive airlift responsibility, MAC directs numerous agencies such as the Air Weather Service, the Aerospace Audiovisual Service, and all the Air Force special operations forces. The more than 94,000 military and civilian MAC people tasked with these missions are spread throughout more than 340 worldwide locations (Dougherty, 1984, p. 106). Although MAC pilots constitute only a small percentage of this large group, the investment they represent is enormous. (Chapter Three provides a more detailed look at this group.)

The specific research objectives are to (a) perform a literature review to survey previous researchers' findings on job attitudes, especially within the Air Force, MAC, and pilot career field, (b) compare OAP measured demographic characteristics and job attitudes of MAC pilots with those of other pilots and of non-rated officers, (c) analyze significant attitudinal differences between MAC pilots, other pilots, and non-rated officers, and (d) develop recommendations for MAC operational flying commanders, planners, and personnel decision makers so they can capitalize on inherent strengths and correct any weaknesses in order to enhance mission effectiveness.

The report addresses these objectives in the following manner. First, Chapter Two provides the results of the background literature review. Next, Chapter Three discusses the OAP survey instrument and data gathering process, identifies the research subjects and describes the data analysis procedures. Chapter Four presents the results of the demographic characterization and the attitudinal analysis of the sample groups. In Chapter Five, the significant attitudinal differences are analyzed against the hypotheses and the findings discussed. Finally, in Chapter Six, the findings are summarized and recommendations presented.

Chapter Two

LITERATURE REVIEW

Pilot retention is an important issue within MAC. It is of considerable concern, not only because of the millions of dollars invested in training each pilot but for the immeasurable loss of valuable experience. Since young rated officers generally leave the service between their 6th and 11th years of aviation service, they leave at a time when they are most productive and most experienced. While there has never been a problem recruiting eager young men and women interested in military aviation, it takes a tremendous amount of time and money to develop and train replacements. For example, a figure recently quoted from the Office of the Special Assistant to the MAC Commander in Chief estimates that it costs a staggering 12 million dollars to acquire and train a C-5 aircraft commander (Coyne, 1985). Thus, ignoring force experience levels, economics alone is enough to warrant an attempt to understand a pilot's motivation to leave the Air Force. The pilot retention issue has consequently been a driving factor in past studies to determine job satisfaction on the part of MAC pilots.

Although retention is a problem impacting the entire Air Force, MAC has been particularly affected. Data available from

the Air Force Military Personnel Center at Randolph AFB, Texas, reveal that the MAC pilot retention rate for FY76 & FY77 was approximately 45% compared to approximately 61% for the rest of the Air Force (Knudsen, 1979). In fact, the average retention figure for MAC pilots over the last nine years is only 50% (Coyne, 1985). Certainly there are many factors responsible for such a low figure and numerous research efforts have been undertaken to determine the root causes of the exodus. In light of this, the majority of past studies (Bonnell and Hendrick, 1981; Knudsen, 1979; Roth, 1981) have concentrated primarily on job dissatisfiers as the causes for leaving the service.

In most cases, the efforts have been one time research theses with little or no follow-up efforts to determine the consequences of major command improvement efforts. An exception to this, and probably one of the earlier attempts to determine MAC aircrew job attitudes, was a two-year research effort conducted by the USAF School of Aerospace Medicine (located at Brooks AFB, Texas) in cooperation with MAC. A voluntary survey was given annually to MAC aircrew members and their spouses beginning in 1965 and ending in 1967. Most of the survey items were designed to determine aircrew member's attitudes regarding perceived problem areas in existence at the time of the survey (Cantrell, 1969). Unfortunately, the effort focused on job dissatisfiers as opposed to job motivational factors recognized as important to positive job satisfaction (Herzberg, Mausner, and Snyderman, 1959).

In an excellent study by Boren (1980), the "Two-Factor Theory" developed by Herzberg is summarized and presented as a basis for analyzing factors relating to job satisfaction. In brief, factors such as feelings of achievement, which correlate directly to job satisfaction, are termed "intrinsic factors" or motivators. Those which cause dissatisfaction such as work rules and policies, are labeled "extrinsic factors" or hygiene factors. The thesis presented in the "Two Factor Theory" specifies that the absence of motivators does not necessarily cause dissatisfaction, but only the absence of satisfaction. Conversely, the presence of positive hygiene factors does not necessarily result in positive job satisfaction, only the absence of dissatisfaction. Thus, in order to attain satisfaction, motivators must be present (Boren, 1980). The Herzberg model has been the foundation for much of the research into motivation and job satisfaction. Although some critics feel the model is too limited or rigid, it has encouraged many follow-on studies which are derivatives of the Two Factor Theory.

Hackman and Oldham, as presented by Boren (1980), were two researchers who built on Herzberg's theory and who directed their efforts towards the concept of job enrichment. The Hackman-Oldham model proposed that motivation and satisfaction on the job depend on three psychological states: meaningfulness, responsibility, and knowledge of results. Based on this theory, they subsequently proposed that five factors were essential if

one wished to improve work motivation, satisfaction, and performance. The factors are skill variety, task identity, task significance, job autonomy, and feedback (Boren, 1980). These five factors have since been included in surveys such as the OAP and form the basis for the Job Diagnostic Survey (Rosenbach and Gregory, 1982).

There has been no specific research undertaken to address job satisfaction or job attitudes of MAC pilots using the OAP survey instrument. However, several studies have been accomplished using other survey instruments which concentrate on job dissatisfiers, or hygiene factors, as the underlying cause for leaving the Air Force.

One such study was conducted by the Airlift Manning Center at the Air Force Manpower Personnel Center. The Strategic Airlift Aircrew Survey was conducted to obtain opinions and attitudes of strategic airlift aircrew members (Knudsen, 1979). The research by Knudsen (1979) analyzed some of the "causal factors influencing career decisions by MAC pilots" (p. 4) using this Strategic Airlift Aircrew Survey. A similar report by Bonnell and Hendrick (1981) focused on eleven factors extracted from the "Air Force Exit Survey" issued to separating Air Force pilots in the 6 to 11 year group. Only 4 of the 11 factors in this survey pertained to the intrinsic motivators of the Herzberg model. Instead, the report emphasized dissatisfiers such as promotion, pay, and past assignments as the impetus for leaving the service. While these factors are important, the

focus on dissatisfaction ignores the fact that intrinsic motivators are more significant in determining job satisfaction.

The attractiveness of the commercial airlines is often blamed for Air Force retention problems. Roth (1981) analyzed the military and civilian pilot career fields and generated a mathematical model synthesizing the decision process undertaken when deciding to leave the Air Force. To further compare the two career fields, Rosenbach and Gregory (1982) studied the "attitudes of commercial airline pilots as well as U.S. Air Force pilots in order to provide insight into the critically acute rate of attrition of military pilots which, the authors feel, is symptomatic of other more basic problems" (p. 617). Results of this study indicate that there are statistically significant differences in job attitudes between Air Force pilots and airline pilots. The results imply that "the job of an airline pilot has the potential for providing a great deal of intrinsic motivation which in turn results in higher job satisfaction and experienced growth. The results of positive job attitudes are greater organizational commitment and lower attrition rates" (p. 617). Interestingly, this view was also recently shared by the MAC Deputy Chief of Staff for Personnel, Col Post, when he said, "We are trying to understand the young officers' concerns better. They don't leave simply because an airline offered a job. They have problems first, and then they look for an airline job" (Coyne, 1985, p. 58).

Unlike previous studies, this research is not directly

concerned with pilot retention, but rather with the job attitudes of MAC pilots. Both positive and negative job attitudes of MAC pilots, as measured by the OAP, will be compared against other Air Force groups to determine if significant differences in job attitudes exist. Since the OAP survey measures Herzberg's intrinsic motivators, a more positive insight into job attitudes of MAC pilots will hopefully result. This might lead to a better understanding of how to retain pilots as well.

Because prior research on MAC pilots' attitudes is scarce, the author has no real basis upon which to propose hypotheses concerning the direction of differences between MAC pilots and other pilots. Instead, attitudes of MAC pilots, other pilots and non-rated officers are compared to determine where differences lie. The next chapter explains how these comparisons are made.

Chapter Three

METHOD

Instrumentation

The OAP is a 109-item survey used by LMDC to assess job attitudes within an organization from a leadership and management perspective. The OAP instrument was developed "to allow organizational strengths and weaknesses to be identified" (Mahr, 1982, p. 8). It measures job attitudes and allows analysis of how Air Force members feel about their jobs.

The OAP development started in 1977 with a request for assistance from LMDC to the Air Force Human Resources Laboratory (AFHRL), Brooks Air Force Base, Texas, and ended with the third and final version of the survey in 1978 (Short, 1985). The survey is designed to measure the three widely accepted variables of successful leadership and management: success of the group, leadership/management style, and the situational environment (Mahr, 1982). This is achieved through a 16-item demographic section followed by a 93-item attitudinal section. The first section assesses such variables as education, ethnic group, sex, and work schedule. The attitudinal section solicits feelings on such factors as task autonomy, job influences, supervision, and pride.

Two key determinants of a survey's usefulness are whether the instrument is valid and reliable. "In many cases, surveys are designed to measure concepts or constructs such as job satisfaction, motivation, etc., for which there is no definite concrete or specific measure. When this is the case, researchers generally resort to factor analysis to help determine the validity of the constructs they have developed" (Mahr, 1982, p. 9). The OAP factor analysis was successfully pursued and documented by Hendrix and Halverson (1979). In addition, Short and Hamilton (1981) conducted a factor by factor analysis of the reliability of the OAP and found "reliability for the primary OAP factors was shown to be acceptable to excellent" (Short, 1985, p. 19). As a result, these findings indicate that the OAP is a valid and reliable data-gathering instrument.

Data Collection

Organizational data gathered for the OAP data base are obtained through the LMDC management consultation process. The process begins with a formal written request by an organizational commander to LMDC. In response, two or three consultants conduct a pre-visit to the organization to discuss particular concerns or questions and to establish survey procedures. One month later, a team arrives to administer the OAP survey to all available personnel in group survey sessions. This data gathering is conducted over a one-week period to

survey as many organizational members as possible. After analysis at LMDC, a tailored visit back to the organization is planned. This visit provides specific, confidential feedback to the commander concerning organizational strengths and weaknesses. Feedback is then provided to unit level supervisors. Specific problem areas are discussed with the consultant team and a management action plan is designed to resolve the problems. Approximately four to six months after the tailored visit, a team returns to conduct a follow-up investigation to determine if progress has been made. The OAP is readministered for a comparative analysis to determine the effectiveness of the consulting effort. The last action is the final report, which summarizes the specific results of the entire effort (The Commander's Guide to Air Force Leadership and Management Consultation Services, 1983).

The data gathered by the consultation process are stored in a cumulative data base presently containing over 300,000 records from more than 100 stations worldwide--over half of all major Air Force organizations. In addition to the 16 demographic items on the OAP questionnaire, other demographic items are stored with each record. They are work group code, personnel category, pay grade, age, Primary Air Force Specialty Code (PAFSC), Duty Air Force Specialty Code (DAFSC), base and major command. The data base consists of two files. A "historical" file contains records gathered prior to 1 October 1981 while the "active" file contains data collected after that date. Research,

or reports such as this, can use either file or a combination of both, whichever is appropriate.

Subjects

This research addresses the OAP responses extracted from the active data base for the period 1 October 1981 to 16 September 1985. The responses of MAC pilots are compared against the responses of two other groups: other Air Force pilots and non-rated officers. Thus, all subjects are Air Force officers. Table 1 shows the sample sizes for the subjects in each category.

Table 1

Sample Sizes of Comparison Groups

MAC Pilots	203
Other Pilots	2311
Non-rated Officers	9107

Procedures

Results of the analyses among the three groups are reported in Chapter Four using two separate comparisons. The first is a comparison between MAC pilots, all other Air Force pilots, and non-rated officers, which explores the demographic profiles of each of these three sample groups. No attempt was made to determine statistically significant differences. The second comparison examines the attitudinal differences between each of

the three sample groups. Comparisons were made in the following four areas of organizational functioning: the work itself, job enrichment, work group process, and work group output. (See Appendix D for the factors and variables that comprise these areas in the OAP survey.) The second comparison identified the groups where a significant statistical difference in attitudes existed at the 95% confidence level. This level of confidence is a conventional standard in the scientific community and was established prior to the analysis. The comparison was conducted in the following manner. The one-way analysis of variance (ANOVA) procedure was used to compare the means for each group to test for possible significant overall differences between mean scores. A probability of F less than .05 (for the 95% confidence level) indicated that at least one group was significantly different from at least one of the other two groups. A Newman-Keuls follow-up test was then used to identify which group(s) is(are) significantly different from each other group. (It is possible to have a significant F probability without a significant Newman-Keuls analysis if differences between groups are relatively small.) Both the ANOVA and the Newman-Keuls follow-up analyses are procedures contained in the Statistical Package for the Social Sciences (SPSS* User's Guide, 1983). The next chapter presents the demographic tabulation and the results of the attitudinal comparisons.

Chapter Four

RESULTS

Introduction

This chapter reports the results of the SPSS* statistical analyses conducted on the OAP survey responses. The results are reported in two sections. The first section presents an analysis of the demographic data and the second section presents the attitudinal data analysis. Only those attitudinal factors determined to be statistically significant at the 95% level of confidence are presented. No attempt is made to analyze the results, draw conclusions, or discuss implications. The discussion of these factors is presented in Chapter Five.

Demographic Analysis

The complete results of the demographic analysis are presented in Appendix A. In addition, Table 2 summarizes the demographic responses and presents a typical demographic profile. A profile is generated for each of the three sample groups in a tabular format to facilitate comparison. No attempt is made to determine significant differences in the demographic factors, but only to point out that differences do exist. Chapter Five addresses specific demographic factors which the author feels might contribute to job attitudes as reported by

the respondents.

Table 2

Respondent Demographic Summary

	Mac Pilots (%)	Other Pilots (%)	Non-Rated (%)
< 8 Years in Service:	44.6	49.3	43.9
> 18 Mo. on Station:	58.6	57.1	51.6
> 36 Mo. in Career Field:	54.2	50.6	59.8
Ethnic Group (% white):	93.5	95.2	85.3
Spouses Employed:	36.6	40.5	56.6
Masters/PhD Degree:	36.0	30.4	50.9
PME--ISS/SSS*:	42.3	37.2	34.8
Supervise People:	49.9	46.6	61.1
Writes Performance Rpts:	42.0	36.6	54.9
Frequent TDY/Travel:	18.2	9.2	7.6
Likely A.F. Career:	77.9	75.5	77.2

* Professional Military Education--Intermediate Service School /Senior Service School

Attitudinal Analysis

The complete results of the attitudinal analysis are presented in Appendix B. OAP responses by MAC pilots were compared to those made by other Air Force pilots and non-rated officers. Statistical differences between the groups were determined by the ANOVA test and Newman-Keuls follow-up test.

These tests determined which groups were significantly different from each other with a 95% level of confidence. Differences are annotated in the tables in the "subset" column, where groups in the same subset are not statistically different. Comparisons were made in four areas of organizational functioning.

1. Work Itself. This area deals with the task properties (technologies) and environmental conditions of the job. It measures perceptions of task characteristics. Table 3 presents four factors for which the groups had significantly different means within this six factor area.

Table 3

The Work Itself

Factor	Mean	Subset*
Job Performance Goals		
MAC Pilots	4.82	2
Other Pilots	4.88	2
Non-rated	4.68	1
Task Autonomy		
MAC Pilots	4.15	2
Other Pilots	3.97	1
Non-rated	4.78	3
Work Repetition		
MAC Pilots	4.46	2
Other Pilots	4.58	2
Non-rated	4.21	1
Job Related Training		
MAC Pilots	4.83	2
Other Pilots	5.23	3
Non-rated	4.52	1

* Groups not in the same subset are significantly different at the .05 level

2. Job Enrichment. Six factors measure the degree to which the job itself is interesting, meaningful, challenging, and responsible. Table 4 presents the three factors in this area with significantly different mean scores among the groups.

Table 4

Job Enrichment

Factor	Mean	Subset*
Skill Variety		
MAC Pilots	5.56	1,2
Other Pilots	5.68	2
Non-rated	5.40	1
Need for Enrichment		
MAC Pilots	5.87	1
Other Pilots	6.00	2
Non-rated	6.15	3
Job Motivation Index		
MAC Pilots	114.33	1
Other Pilots	109.29	1
Non-rated	133.40	2

* Groups not in the same subset are significantly different at the .05 level

3. Work Group Process. Assesses the effectiveness of supervisors and the process of accomplishing the work. Significantly different mean scores occurred among the groups for all four factors within this area (see Table 5).

Table 5

Work Group Process

Factor	Mean	Subset*
Work Support		
MAC Pilots	4.36	1
Other Pilots	4.35	1
Non-rated	4.63	2
Management Supervision		
MAC Pilots	5.04	1
Other Pilots	5.46	3
Non-rated	5.28	2
Supervisory Communications Climate		
MAC Pilots	4.59	1
Other Pilots	5.02	3
Non-rated	4.83	2
Organizational Communications Climate		
MAC Pilots	4.83	1
Other Pilots	5.03	2
Non-rated	4.86	1

* Groups not in the same subset are significantly different at the .05 level

4. Work Group Output. Measures task performance, group development, and the effects of the work situation on group members. There were significant differences in the comparisons for three of the five factors in this area (see Table 6).

Chapter Five presents a discussion of these results.

Table 6

Work Group Output

Factor	Mean	Subset*
Pride		
MAC Pilots	5.56	1,2
Other Pilots	5.70	2
Non-rated	5.44	1
Job Related Satisfaction		
MAC Pilots	5.26	1
Other Pilots	5.24	1
Non-rated	5.46	2
General Organizational Climate		
MAC Pilots	5.26	1,2
Other Pilots	5.36	2
Non-rated	5.17	1

* Groups not in the same subset are significantly different at the .05 level

Chapter Five

DISCUSSION

Introduction

The purpose of this research is to determine whether the job attitudes of MAC pilots are significantly different from those of other Air Force pilots and of non-rated officers. Even though a factor might be reported in Chapter Four as statistically different, the difference may be small and have little managerial or practical significance. This chapter discusses those factors which have been identified as statistically different and which are also felt to be of practical significance to management.

Although 11 attitudinal factors were determined to be statistically different for MAC pilots compared to other pilots and non-rated officers, only 8 of these factors are judged to be significant enough to warrant discussion. The criterion used to judge practical significance is a somewhat subjective "rule of thumb" and is based on LMDC experience. If the difference in means between sample groups exceeds .25 for any factor, then that difference is judged likely to be of practical significance. Using the above criterion, the following eight factors are discussed:

1. Task Autonomy
2. Work Repetition
3. Job Related Training
4. Need for Enrichment
5. Job Motivation Index
6. Work Support
7. Management/Supervision
8. Supervisory Communications

These eight factors represent three of the four organizational function groupings (see Appendix B). The "Work Group Output" is the only function which did not contain any factors deemed both practically and statistically significant for MAC pilots. Once the eight factors were identified, the difference scores for specific variables, which compose each factor, were examined. A statistical analysis, using the same criteria as for the factor scores, was accomplished. A Newman-Keuls follow-up test then identified groups significantly different from each other. These statistical results are presented in Appendix C. The following discussion integrates the findings on the variables, those on the factors, and information from the literature review into proposed explanations for the results. There was no shortage of reference material in the area of organizational behavior and management, specifically work motivation and job satisfaction. Using this material and personal experience as a guide, the author tries to evaluate why MAC pilots have responded in the way that they have, compared to the other two groups. Unfortunately, the "strategic airlifter" bias might appear, but every attempt is made to keep it as subtle as possible.

One might assume that MAC pilots and the second group of

"all other pilots" would generally respond to items in a similar manner. Interestingly, there were some marked differences in the responses between these two groups. The third group, or "non-rated officers" was intended as a control group whose responses would tend to differ equally from the first two groups. Although this was generally the case, there were some surprises.

Overall results of the analysis between the three groups are examined first, followed by a discussion of the specific findings. This discussion addresses the definite differences between the groups with primary emphasis on the responses of the MAC pilots. From these data the author draws some conclusions and finally, in Chapter Six, makes some recommendations to MAC commanders, planners, and personnel managers.

General Overview

It is surprising to note that MAC pilots achieved the highest mean in only 2 of 22 factors. Even in these two cases, the differences were not statistically significant. In the functional category of "The Work Itself" the tendency was for the "other pilot" group to have the highest absolute mean followed by MAC and then the non-rated group. In analyzing the "Job Enrichment" and "Work Group Output" functional categories, there was no definite tendency by any one group to predominate. However, in the third functional category, "Work Group Process", again "other pilots" tended to achieve the highest means,

followed by the non-rated group and finally the MAC group. Overall, "other pilots" consistently achieved the highest mean in the majority of comparisons. If one can infer then that other Air Force pilots achieve a higher level of job satisfaction from their duties, then why do MAC pilots not enjoy a similar level? The following analysis of the specific factors will attempt to answer this.

Specific Factors

Each of the eight factor score differences, determined to be significant, is discussed below. (See Appendix D for a description of the factors and variables mentioned.)

Task Autonomy

Task Autonomy, Factor 813, measures the degree to which the job provides freedom to do the work as one sees fit and discretion in scheduling, decision making, and choosing the means for accomplishing the job. Task Autonomy, described in this way, would seem limited in light of the duties of the squadron pilot. Regulations, manuals, checklists, standardization training, technical orders, and numerous other constraints dictate the duties of the pilot, regardless of the major command to which he or she belongs. Unfortunately, the author feels that as computer and communications technology is integrated into the cockpit and the command and control system, the autonomy of the pilot can only be further constrained. As might be expected, MAC pilots and other pilots responded

similarly to this factor but much less positively than did non-rated officers. This was expected, but not to the degree which is reflected in the responses. For instance, the difference in means between the other pilots group and the non-rated officers exceeded 1.00 scale units for variables 270 (job provides freedom and independence in scheduling) and 271 (freedom and independence in selecting own procedures), and reached a difference of 0.76 scale units for variable 213 (freedom to do your work as you see fit) (see Table C-1). Statistically, and practically, these are extremely significant differences.

Behavioral experts place a lot of emphasis on autonomy as a means of increasing job satisfaction: ". . . the most straight-forward conclusion is that autonomy alone is sufficient to account for positive attitudinal results" (Srivastra, et al., 1977, p. 172). Myers (1981) emphasizes autonomy with the thesis that every employee is a manager through the meaningful work concept of being a planner, a performer, and a controller of one's own tasks. The results indicate that autonomy is not present to the degree that a MAC pilot would like to experience. Does the "MAC mission" so constrain our operation that autonomous functioning is unattainable?

Work Repetition

Work Repetition, Factor 814, measures the extent to which one performs the same tasks or faces the same types of problems

on a regular basis. The higher the numeric response, the greater the degree of repetition (see Table B-1). Apparently there is some division of thought on whether repetitive tasks cause job dissatisfaction. There is an effort by many in management to make jobs more interesting and satisfying through job enrichment or job enlargement. Job enlargement is based on the assumption that "highly repetitive jobs cause boredom, fatigue, disinterest in work, and a loss of self-esteem on the part of the individual" (Carroll, 1973, p. 16). Carroll then briefly discusses numerous researchers who discard this notion and believe that repetition offers some positive aspects to the job.

Regardless of what the researchers might theorize, if people perceive repetition to be a negative aspect of the job then we can safely assume that it is a job dissatisfier. Factor 816, Desired Repetitive/Easy Tasks, measures the extent one desires repetitive tasks or tasks which are easily accomplished. Although statistically insignificant as a primary factor, the results indicate that all three groups equally favor repetition only a slight to moderate amount. In contrast, Factor 814 indicates that all three groups do, in fact, find their jobs to be more than moderately repetitive.

A look at variables 226 (same task repeatedly in a short time) and 227 (same type of problem on a weekly basis) (see Table C-2), which make up the Work Repetition factor, indicates that other pilots, more so than MAC pilots, find their jobs more

repetitive than do non-rated officers. This might be expected since military pilots undergo continuous, repetitive training in preparation for task accomplishment in war. MAC pilots might feel their work is less repetitious than other pilots because of the nature of their world-wide mission. Based on the need for continuous training and the uncertainty over the significance of repetitive work, the results on this factor probably have relatively limited practical implications.

Job Related Training

Job Related Training, Factor 823, measures the extent to which one is satisfied with on-the-job and technical training received. The variables, 711 and 712, solicit ratings of instructional methods, instructor competence, and satisfaction with technical training. In looking at the Job Related Training factor in Table B-1, we find other pilots feel significantly more positive than MAC pilots about job training. MAC pilots, in turn, feel more positive than non-rated officers. Comparing the two pilot groups, the data seem appropriate for the missions. As indicated in the Work Repetition discussion, the flying commands other than MAC (i.e., Strategic Air Command, Tactical Air Command, Air Training Command, etc.) accomplish most of their flying hours in a training mode. MAC pilots however, receive most of their concentrated training when involved in a qualification upgrade program or in local area proficiency flights. The limited MAC aircraft and crews can hardly keep up with the increasing operational flying

commitments imposed by all services, which depend more and more on military airlift for their own training and exercises. Unlike other flying organizations, flying hours do not necessarily equate to improved flying ability within MAC. Unfortunately, long navigation legs, which constitute a large part of the flying hour total, are not entirely productive. Productivity is hampered by long crew days, necessity to move the mission, and "midnight take-offs." Furthermore, during periods when pilot retention was a problem and experience levels were less than desired, it was necessary to qualify pilots in the next higher crew position at a quicker pace than might be desired. This may be reflected in the relatively lower MAC pilot ratings for training.

Regardless of the user, there is no question concerning the need for training. Is our approach to training the most effective for producing the quality pilots needed in the Military Airlift Command? Goldstein and Buxton (1982, p. 141) feel, "the most common purpose of training programs is to teach the knowledge and skills necessary to perform the tasks required on the job. Unfortunately, little attention is paid to those attitudes and perceptions that affect performance, both in training and on the job." Goldstein and Buxton refer to research by Holberg and Berry (1978) regarding the Navy's training program. Results indicate that "findings relative to the technical training schools indicated that those schools that emphasized less pressure to complete work tasks and more

opportunities for personal growth, support from instructors, and innovative teaching methods had larger percentages of effective students" (pp. 140-141). Assuming flight training is a technical skill, perhaps the above results contain some validity in application to MAC training. Because of the author's lack of experience in the training area, no attempt is made here to identify proposed improvements in training. It is important to realize, however, that significant differences of approximately .40 mean scale points exist between MAC pilots and other pilots for Factor 823, Job Related Training.

Need for Enrichment

Need for Enrichment, Factor 806, has to do with job related characteristics (autonomy, personal growth, use of skills, etc.) that the individual would like to have in a job. The supposition here is that if the characteristic is desired then it is lacking in the present job. Overall analysis of the factor indicates that MAC pilots are significantly different from both other pilots and non-rated officers (Table B-2). Although statistically significant, the differences between the two pilot groups does not appear to be practically significant from a management perspective. Only two of seven variables listed in Table C-4 bear discussing. Variable 249 relates to the "opportunities to have independence in my work." In this item, MAC pilots and other pilots are significantly different from the non-rated sample group. Variable 253, however, is more interesting when the pilot groups are compared to the non-rated

officers group. This item refers to "opportunities to perform a variety of tasks." Flying can be very constraining--probably more so in MAC than the other flying commands. Due to the expense, safety, and mission requirements of strategic airlift, there is little opportunity to innovate and challenge oneself in testing the limits of the aircraft. There are, however, plenty of opportunities to perform a variety of non-flying additional duties and, as will be discussed later, these can be job dissatisfiers.

Fray (1975) submitted a study to Air University in which he researched the need for job enrichment in the Air Force. He concentrated his study on the works of Abraham Maslow, Frederick Herzberg, and Douglas McGregor, three of the most famous and often quoted behavioral scientists. Fray feels that the Air Force has initiated many innovative and successful "people" programs, but has failed in the more modern concept of job design. He states, "the attitude still prevails that we must mold the individual to fit a preconceived idea of the job, rather than tailoring the job to fit the individual. The Air Force must motivate it's people toward higher levels of endeavor and productivity" (p. 16). As the Air Force strives for increased levels of education for it's officers, the need to accomplish this will become more apparent as the educated officer demands more meaning in his work. Review of Table 2 in Chapter Four highlights the fact that MAC pilots are better educated (higher percentage of advanced degrees) than other

pilots but less so than non-rated officers. The percentage of MAC pilots who have accomplished advanced professional military education is noticeably higher than for either of the other two groups. Although the current trend in learning is perhaps driven in some part by the need to remain competitive for promotion, the Air Force should accept this windfall and strive to enrich the job for maximum benefit to the Air Force.

Job Motivation Index

The Job Motivation Index, Factor 807, is a composite index, derived from the six job characteristics, that reflect the overall "motivating potential" of a job (i.e., the degree to which a job will prompt high internal work motivation on the part of the job incumbents). The factors involved in computing the index are factors 800, 801, 802, 804, 805, and 813.

The index (see Table B-2) indicates that both pilot groups are statistically different from the non-rated sample group. An Air Force officer's average numerical index (provided by LMDC) is approximately 132.00. This compares very well with the non-rated mean of 133.40, but less so with the scores of the pilot groups. A review of Tables B-1, B-2, and B-3 reveals that the factors which would explain this negative difference are Factors 805 (Work Support) and 813 (Task Autonomy). The construction of the index formula (see Appendix D) emphasizes the effect of Factor 813 due to the multiplication factor, and dilutes the impact of Factor 805 due to the averaging of the factor in the formula. It is interesting to note that

difference scores on both of these factors are considered statistically and managerially significant in terms of this report. Thus, there is some likelihood that these two factors reflect a less positive impact on job satisfaction of MAC pilots.

Work Support

Work Support, Factor 805, also titled Performance Barriers/ Blockages, measures the degree to which work performance is hindered by additional duties, details, inadequate tools, equipment, or work space. Table B-3 shows the means for the pilot groups to be almost identical, but significantly lower than the mean of the non-rated sample group. A study of the three variables 206, 207, and 208, (see Table C-5) which constitute this factor clearly shows that variable 206 is responsible for the lower pilot rating for the Work Support factor. This variable questions, "to what extent do additional duties interfere with the performance of your primary job?" A lower mean for this variable indicates a more positive feeling about having to perform additional duties. Non-rated officers rate this item .81 mean scale units more positive (smaller mean) than do MAC pilots.

Rosenbach and Gregory (1980) substantiate the negative implication of additional duties. They found that,

> the most consistent finding of the analysis of interviews and written comments of both airline and Air Force pilots in our study is that pilots like to fly and dislike the nonflying aspects of Air Force

> flying jobs. Much of the dissatisfaction of Air Force pilots in their current flying jobs comes from such things as additional duties, pressure to obtain additional education, pressure to broaden into nonflying career fields, and lack of opportunity for promotion in flying jobs (p. 619).

Bonnell and Hendrick (1981) used the Air Force Exit Survey results (May 1979 - December 1980) to determine factors influencing the turnover of rated USAF officers with less than 11 years of service. One such factor was Job Autonomy. Eight variables, including additional duties, were lumped together within the Job Autonomy factor. This factor measured "the amount and responsibility allowed on the job to include the extra responsibilities acquired as a result of flight scheduling and additional duties" (p. 36). On a four point scale, the mean response for Job Autonomy was 1.48, indicating a minor to moderate contributor to the turnover rate. Although apparently insignificant, further analysis of the eight variables which constituted this Job Autonomy factor might reveal a more significant dissatisfaction with additional duties.

Management/Supervision

Management and Supervision, Factor 818, measures the degree to which the worker has high performance standards and good work procedures. It measures support and guidance received, and the overall quality of supervision. Surprisingly, this may be the most important of the eight factors presented in this report. First, because of the magnitude of difference between the means, and second, because the significant difference lies between the

two pilot groups with MAC respondents expressing the least positive attitude of the three (Table B-3). A more detailed analysis of the eight variables which make up this factor reveals that seven of them are statistically and practically significant. Rather than discussing all seven variables, only the three variables with the largest differences will be discussed. This, however, in no way reduces the significance of the other four. The three variables are 411, 412, and 445. Variable 411 asks whether the supervisor represents the group at all times. Variable 412 asks whether the supervisor establishes good work procedures. The last variable, 445, determines if the supervisor fully explains procedures to each group member.

It is extremely difficult to hypothesize why each of these variables was rated so low by MAC pilots. Rather than discuss each of these variables independently, the following hypothesis is based on an analysis of the entire factor. Supervision and management is, of course, unique to each situation and organization. However, when a large group within a command evaluates a concept negatively, the problem may lie within the structure of the organization. There are two considerations which may have some impact on this factor: amount of temporary duty (TDY) and the chain of supervision. There may be little we can do about the amount of time spent away from home, (other than to maintain a large pilot force) but the disruptive and variable nature of TDYs may have a direct impact on the second problem--the supervisory chain. My experience in MAC is limited

to one strategic airlift squadron; however, my observations there may relate to the entire command. The squadron chief pilot is the direct line supervisor for all pilots in the squadron. Most strategic squadrons have in excess of 65-75 pilots. It is most difficult, with this number of professional people, for a supervisor to account for anything more than administrative concerns such as upgrade qualification and flight currency. One-on-one supervision and guidance are almost non-existent. The staggering amount of TDY makes the connection all the more difficult to establish. Perhaps intermediate level supervisors (i.e. flight commanders) could fill in the gap to alleviate the supervisor overload problem.

The role of a leader/manager is to "devote the time to nurture the leadership potential, motivation, morale, climate, commitment to objectives, and the decision making, communication, and problem-solving skills of their people" (Hersey & Blanchard, 1977, p. 179). Our present organizational structure, i.e., the "span of control" of a chief pilot, fails to establish a climate where these vitally necessary qualities can be developed in our young pilots. Unfortunately, this finding relates well with that of the AFMIG, mentioned earlier, as the impetus for establishing LMDC. The author feels that this void is the primary cause for young pilots leaving the Air Force. A restructure in this area would do more to develop the human resource and help retention than any other change or

improvement.

Supervisory Communications Climate

The Supervisory Communications Climate, Factor 819, measures the degree to which the worker perceives that there is good rapport with supervisors, that there is a good working environment, that innovation for task improvement is encouraged, and that rewards are based on performance. Similar to the Management and Supervision factor, this factor also reflects a fairly large difference between the means of the two pilot groups (Table B-3). Analysis of the eight variables composing this factor indicates that all eight show significant differences (Table C-7). In each variable, the largest mean difference is, again, between the MAC pilot group and the other pilot group; the non-rated officer group falls between the other two groups. Again, so as not to get too detailed in this report, only the three most important variables will be discussed. Variable 428 measures whether the "supervisor explains how my job contributes to the overall mission." Variable 437 asks whether "job performance has improved due to feedback received from my supervisor." Variable 442 inquires whether "the supervisor has given feedback on how well I am doing my job." A substantial mean difference for each of these variables exists and ranges from .45 to .53. Referring to Variable 428, while in the squadron, my knowledge of the MAC mission was limited. It was not until my assignment to the wing and numbered Air Force that the MAC mission became more clear to

me. There are some aspects which are still unclear. MAC does have a very detailed and intensive staff course in which the total MAC mission is explained. The Airlift Operations School, conducted at MAC Headquarters several times a year, is limited in the number who can attend and one must generally have seniority as a major. This is far too late in a career to finally understand the reasons behind the midnight departures and frequent TDYs. Unfortunately, there is no mini-course given upon entering the command to acquire this knowledge and few line aircraft commanders in the squadron know it well enough to explain it to a questioning copilot.

The extremely important variables pertaining to feedback can be addressed together. Feedback exists usually in the form of standardization evaluation flights and officer effectiveness reports (OER). In most cases, the officer who writes the OER of a line pilot does not supervise the pilot. Sometimes the rater doesn't even know the pilot he or she is rating. Can one expect quality feedback if this situation exists? The problems identified by this factor can be directly related to the Management and Supervision factor. The supervisor of the line pilot in MAC is far too removed to provide specialized education or feedback. This, in my opinion, is the basis for some of the problems encountered by MAC pilots. Although communications has not been addressed as a separate direct causal factor, D'Aprix (1982) states the importance of employee communications.

Too many managers at all levels see employee

> communications as a lip-service activity. This failure to understand that management is communications and that face-to-face discussion with workers i· vital at all levels is costing America dearly in efficiency, productivity, and the will to compete (p. 32).

Based on the results of the OAP data in Chapter Four and the above discussion, Chapter Six presents several recommendations which the author feels may be of benefit for MAC commanders, planners, and personnel managers.

Chapter Six

CONCLUSION and RECOMMENDATIONS

The results of this study indicate that MAC pilots tend to be generally less satisfied with their jobs than are other Air Force pilots and non-rated officers. The discussion of the results showed that only 2 of the 22 factors showed higher absolute means for MAC pilots than for the other two groups. Although the discussion of factors in Chapter Five concentrated on organizational weaknesses, as perceived by MAC pilots, there are many positive aspects. In fact, on more than 50% of the factors there were no significant differences in the mean scores among the groups. Of the 11 factors considered statistically significant for MAC pilots, only eight were considered to be of practical significance for management.

The author tried not to dwell on the specific value of each of the means, but rather how the means differed relative to the means of the comparison groups. The emphasis was on how MAC pilots compared to the other pilot group, with less emphasis on the non-rated group. Consequently, the analysis revealed significant differences between these two primary groups. Particularly noteworthy is the conclusion that MAC needs improvement in management/supervision and the supervisory

communications climate. Recommendations will concentrate on these two areas.

Five recommendations are offered for consideration in improving the level of job satisfaction in MAC.

1. Establish experienced intermediate level supervisors subordinate to the squadron chief pilot who are not concerned with administrative trivia but, rather, with the development of company grade officers/pilots. Career counseling, guidance, performance evaluation, and many other activities would allow closer contact with the squadron pilots and therefore improved satisfaction. Analyze existing flight commander programs, i.e., KC-10s, which have a similar mission.

2. Establish a short "Airlift Operations School" style indoctrination course at Altus AFB to provide new MAC pilots the opportunity to learn the MAC mission. Provide a comprehensive guidebook (similar to the MAC "Birds fly free . . ." pamphlet) that could be used for later reference.

3. Reduce the number of non-essential additional duties that the flying officer must perform. Challenge administrative NCOs with more responsibility. Challenge officers at all levels with greater responsibility by reducing trivial duties.

4. Perform a zero-based study of the way we train in MAC. Emphasize wartime instead of peacetime flying operations. Every MAC pilot should be proficient in combat tactics. Combat aircrew training should not be limited to a few but should be a basic part of transition training.

5. Use the OAP data base to compare the job attitudes of all pilots broken out by major command. Perform a comparative analysis to determine if positive programs of other flying commands would be appropriate for adoption by MAC.

It is the author's desire that this study will prove useful in highlighting weaknesses in MAC's operation encouraging new efforts to improve the job satisfaction of the MAC pilot and, therefore, increase combat readiness, capability, and retention.

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APPENDIX

APPENDIX A: DEMOGRAPHIC RESULTS

Appendix A

Table A-1

Number of Respondents by Personnel Category

	MAC Pilots (n)	Other Pilots (n)	Non-Rated (n)
Respondents	203	2311	9107

Table A-2

Sex by Personnel Category

	MAC Pilots n = 203	Other Pilots 2311	Non-Rated 9076
Male (%)	99.5	99.5	82.9
Female (%)	0.5	0.5	17.1

Table A-3

Age by Personnel Category

	MAC Pilots n = 203 (%)	Other Pilots 2311 (%)	Non-Rated 9107 (%)
21 to 25 Yrs	8.4	16.6	11.5
26 to 30 Yrs	38.9	34.9	24.8
31 to 35 Yrs	20.7	20.6	23.9
36 to 40 Yrs	23.2	19.9	20.1
41 to 45 Yrs	7.4	6.5	12.6
46 to 50 Yrs	1.5	0.9	4.3
> 50 Yrs	0.0	0.6	2.8

Appendix A

Table A-4

Time in the Air Force

	MAC Pilots n = 202 (%)	Other Pilots 2311 (%)	Non-Rated 9088 (%)
< 1 Yr	0.0	0.1	4.5
1 to 2 Yrs	2.5	2.6	6.3
2 to 3 Yrs	8.9	10.6	6.8
3 to 4 Yrs	5.0	9.0	6.4
4 to 8 Yrs	28.2	27.0	19.9
8 to 12 Yrs	15.8	19.6	14.6
> 12 Yrs	39.6	31.1	41.5

Table A-5

Months in Present Career Field

	MAC Pilots n = 201 (%)	Other Pilots 2294 (%)	Non-Rated 9053 (%)
< 6 Mos	7.0	4.7	5.4
6 to 12 Mos	7.0	9.4	7.3
12 to 18 Mos	9.5	9.5	7.2
18 to 36 Mos	22.4	25.9	20.2
> 36 Mos	54.2	50.6	59.8

Table A-6

Months at Present Duty Station

	MAC Pilots n = 203 (%)	Other Pilots 2305 (%)	Non-Rated 9082 (%)
< 6 Mos	13.8	10.5	14.6
6 to 12 Mos	11.8	16.4	17.0
12 to 18 Mos	15.8	15.9	16.8
18 to 36 Mos	40.9	37.4	35.5
> 36 Mos	17.7	19.7	16.1

Table A-7

Months in Present Position

	MAC Pilots n = 203 (%)	Other Pilots 2301 (%)	Non-Rated 9072 (%)
< 6 Mos	31.0	31.2	25.3
6 to 12 Mos	27.1	29.4	23.6
12 to 18 Mos	13.8	17.0	17.2
18 to 36 Mos	21.2	17.7	26.5
> 36 Mos	6.9	4.7	7.4

Appendix A

Table A-8

Ethnic Group

	MAC Pilots n = 202 (%)	Other Pilots 2300 (%)	Non-Rated 9064 (%)
White	93.6	95.2	85.3
Black	1.5	1.0	7.5
Hispanic	2.5	0.9	2.7
Other	2.5	2.9	4.5

Table A-9

Marital Status

	MAC Pilots n = 203 (%)	Other Pilots 2306 (%)	Non-Rated 9102 (%)
Not Married	19.7	19.7	21.7
Married	79.3	79.8	76.5
Single Parent	1.0	0.5	1.8

Table A-10

Spouse Status

	Geographically Seperated			Not Geo. Seperated		
	MAC	**Other**	**Non-Rated**	**MAC**	**Other**	**Non-Rated**
	n = 6 (%)	55 (%)	343 (%)	155 (%)	1785 (%)	6619 (%)
Civ. Employed	33.3	60.0	58.3	29.7	35.5	34.5
Not Employed	33.3	20.0	19.5	64.5	60.7	55.1
Mil. Member	33.3	20.0	22.2	5.8	3.8	10.4

Table A-11

Educational Level

	MAC Pilots n = 203 (%)	Other Pilots 2309 (%)	Non-Rated 9078 (%)
HS Grad or GED	0.0	0.0	0.3
< 2 Yrs College	0.0	0.0	0.3
> 2 Yrs College	0.5	0.1	1.8
Bachelors Degree	63.5	69.3	46.8
Masters Degree	36.0	30.3	39.7
Doctoral Degree	0.0	0.1	11.2

Table A-12

Professional Miltary Education

	MAC Pilots n = 201 (%)	Other Pilots 2308 (%)	Non-Rated 9097 (%)
None	23.9	33.4	35.4
Phase 1 or 2	0.0	0.4	1.3
Leadership Sch	0.5	0.2	1.6
Command Academy	0.0	0.0	1.2
Sr NCO Academy	0.0	0.0	0.2
Sq Officers Sch	33.3	28.9	25.5
Int Service Sch	35.8	29.4	20.9
Sr Service Sch	6.5	7.8	13.9

Table A-13

Number of People Directly Supervised

	MAC Pilots n = 202 (%)	Other Pilots 2300 (%)	Non-Rated 9063 (%)
None	50.0	53.4	39.0
1 Person	4.0	4.6	7.7
2 People	7.4	4.6	6.6
3 People	6.9	9.1	7.6
4 to 5 People	10.4	10.6	14.5
6 to 8 People	5.4	6.7	11.0
9 or > People	15.8	11.0	13.7

Table A-14

Number People for Whom Respondent Writes APR/OER/Appraisal

	MAC Pilots n = 200 (%)	Other Pilots 2306 (%)	Non-Rated 9082 (%)
None	58.0	63.4	45.1
1 Person	8.5	4.4	10.9
2 People	7.5	4.5	8.1
3 People	4.5	7.0	7.8
4 to 5 People	10.5	10.3	12.3
6 to 8 People	7.5	6.3	9.6
9 or > People	3.5	4.2	6.1

Table A-15

Supervisor Writes Resondents APR/OER/Appraisal

	MAC Pilots n = 200 (%)	Other Pilots 2279 (%)	Non-Rated 8967 (%)
Yes	51.0	85.1	76.4
No	41.5	10.6	14.2
Not Sure	7.5	4.3	9.4

Table A-16

Work Schedule

	MAC Pilots n = 203 (%)	Other Pilots 2284 (%)	Non-Rated 9017 (%)
Day Shift	14.8	19.4	74.3
Swing Shift	0.0	0.0	0.3
Mid Shift	0.0	0.0	0.1
Rotating Shifts	4.4	5.0	4.8
Irregular Schedule	6.9	21.5	10.8
A Lot TDY/On-call	18.2	9.2	7.6
Crew Schedule	55.7	44.7	2.1

Table A-17

Supervisor Holds Group Meetings

	MAC Pilots n = 196 (%)	Other Pilots 2284 (%)	Non-Rated 9004 (%)
Never	11.2	5.2	6.6
Occasionally	29.6	22.2	22.2
Monthly	21.4	16.1	13.1
Weekly	25.5	38.9	44.2
Daily	10.7	15.2	12.1
Continuously	1.5	2.3	1.9

Table A-18

Supervisor Holds Group Meetings to Solve Problems

	MAC Pilots n = 194 (%)	Other Pilots 2280 (%)	Non-Rated 8944 (%)
Never	24.7	13.1	15.4
Occasionally	47.9	42.0	42.5
Half the Time	15.5	21.7	22.4
Always	11.9	23.2	19.7

Table A-19

Aeronautical Rating and Current Status

	MAC Pilots n = 203 (%)	Other Pilots 2309 (%)	Non-Rated 8938 (%)
Nonrated, not on crew	0.0	0.3	85.0
Nonrated, now on crew	0.0	0.2	3.2
Rated, crew/ops	88.7	90.7	2.9*
Rated, support	11.3	8.8	8.8*

* No explanation for this apparent contradiction

Table A-20

Career Intent

	MAC Pilots n = 203 (%)	Other Pilots 2299 (%)	Non-Rated 9053 (%)
Retire 12 Mos	2.0	1.5	3.9
Career	48.8	44.7	53.4
Likely Career	27.1	29.3	19.9
Maybe Career	16.7	18.8	14.1
Likely Seperate	4.4	4.1	5.3
Seperate	1.0	1.6	3.3

APPENDIX

APPENDIX B: ATTITUDINAL RESULTS

Appendix B

Table B-1

ANOVA: MAC Pilots vs Other Air Force Pilots vs Non-rated Officers

THE WORK ITSELF

	Mean	SD	Subset	df	F
Job Performance Goals				2, 11177	40.26***
MAC Pilots	4.82	.88	2		
Other Pilots	4.88	.88	2		
Non-rated	4.68	1.01	1		
Task Characteristics				2, 11235	5.68**
MAC Pilots	5.38	.93	1		
Other Pilots	5.42	.88	1		
Non-rated	5.34	.96	1		
Task Autonomy				2, 11266	356.94***
MAC Pilots	4.15	1.25	2		
Other Pilots	3.97	1.30	1		
Non-rated	4.78	1.30	3		
Work Repetition				2, 11431	67.70***
MAC Pilots	4.46	1.38	2		
Other Pilots	4.58	1.29	2		
Non-rated	4.21	1.39	1		
Desired Repetitive/ Easy Tasks				2, 11090	0.46
MAC Pilots	2.40	.98	1		
Other Pilots	2.47	1.00	1		
Non-rated	2.47	1.06	1		
Job Related Training				2, 9049	173.69***
MAC Pilots	4.83	1.43	2		
Other Pilots	5.23	1.26	3		
Non-rated	4.52	1.50	1		

Note: Groups not in the same subset are significantly different at the .05 level.

***$p \leq .001 <$ **$p \leq .01 <$ *$p \leq .05$

Appendix B

Table B-2

ANOVA: MAC Pilots vs Other Air Force Pilots vs Non-rated Officers

JOB ENRICHMENT

	Mean	SD	Subset	df	F
Skill Variety				2, 11508	43.07***
MAC Pilots	5.56	1.24	1,2		
Other Pilots	5.68	1.17	2		
Non-rated	5.40	1.30	1		
Task Identity				2, 11477	8.51**
MAC Pilots	5.19	1.21	1		
Other Pilots	5.33	1.15	1		
Non-rated	5.21	1.23	1		
Task Significance				2, 11528	1.63
MAC Pilots	5.85	1.15	1		
Other Pilots	5.78	1.16	1		
Non-rated	5.83	1.27	1		
Job Feedback				2, 11494	0.93
MAC Pilots	4.90	1.24	1		
Other Pilots	4.87	1.10	1		
Non-rated	4.90	1.20	1		
Need for Enrichment				2, 11247	36.33***
MAC Pilots	5.87	0.89	1		
Other Pilots	6.00	0.85	2		
Non-rated	6.15	0.85	3		
Job Motivation Index				2, 10534	112.23***
MAC Pilots	114.33	62.09	1		
Other Pilots	109.29	57.80	1		
Non-rated	133.40	69.14	2		

Note: Groups not in the same subset are significantly different at the .05 level.

***p < .001 · **p < .01 · *p < .05

Table B-3

ANOVA: MAC Pilots vs Other Air Force Pilots vs Non-rated Officers

WORK GROUP PROCESS

	Mean	SD	Subset	df	F
Work Support				2, 11089	61.26***
MAC Pilots	4.36	1.11	1		
Other Pilots	4.35	1.04	1		
Non-rated	4.63	1.10	2		
Management/Supervision				2, 10861	18.42***
MAC Pilots	5.04	1.38	1		
Other Pilots	5.46	1.15	3		
Non-rated	5.28	1.39	2		
Supervisory Communications Climate				2, 10615	18.35***
MAC Pilots	4.59	1.48	1		
Other Pilots	5.02	1.25	3		
Non-rated	4.83	1.46	2		
Organizational Communications Climate				2, 10737	16.99***
MAC Pilots	4.83	1.16	1		
Other Pilots	5.03	1.15	2		
Non-rated	4.86	1.29	1		

Note: Groups not in the same subset are significantly different at the .05 level.

***$p \leq .001$ < **$p \leq .01$ < *$p \leq .05$

Appendix B

Table B-4

ANOVA: MAC Pilots vs Other Air Force Pilots vs Non-rated Officers

WORK GROUP OUTPUT

	Mean	SD	Subset	df	F
Pride				2, 11467	33.39***
MAC Pilots	5.56	1.24	1,2		
Other Pilots	5.70	1.27	2		
Non-rated	5.44	1.42	1		
Advancement/Recognition				2, 11017	3.83*
MAC Pilots	4.55	1.12	1		
Other Pilots	4.56	1.10	1		
Non-rated	4.64	1.20	1		
Perceived Productivity				2, 11121	11.05***
MAC Pilots	5.74	0.98	1		
Other Pilots	5.87	0.93	1		
Non-rated	5.75	1.12	1		
Job Related Satisfaction				2, 10369	36.37***
MAC Pilots	5.26	1.02	1		
Other Pilots	5.24	1.02	1		
Non-rated	5.46	1.08	2		
General Organizational Climate				2, 10782	20.67***
MAC Pilots	5.26	1.12	1,2		
Other Pilots	5.36	1.15	2		
Non-rated	5.17	1.28	1		

Note: Groups not in the same subset are significantly different at the .05 level.

***$p \leq .001$ < **$p \leq .01$ < *$p \leq .05$

APPENDIX

APPENDIX C: VARIABLES OF SIGNIFICANT FACTORS

Appendix C

Table C-1

ANOVA: MAC Pilots vs Other Air Force Pilots vs Non-rated Officers

TASK AUTONOMY

	Mean	SD	Subset	df	F
Variable 270				2, 11508	355.60***
MAC Pilots	3.98	1.75	2		
Other Pilots	3.61	1.74	1		
Non-rated	4.68	1.73	3		
Variable 271				2, 11513	402.21***
MAC Pilots	3.88	1.57	1		
Other Pilots	3.78	1.58	1		
Non-rated	4.79	1.56	2		
Variable 213				2, 11511	258.53***
MAC Pilots	4.06	1.45	1		
Other Pilots	4.04	1.50	1		
Non-rated	4.80	1.45	2		
Variable 214				2, 11513	72.27***
MAC Pilots	4.62	1.37	2		
Other Pilots	4.42	1.48	1		
Non-rated	4.83	1.50	3		

Note: Groups not in the same subset are significantly different at the .05 level.

***$p \leq .001 <$ **$p \leq .01 <$ *$p \leq .05$

Appendix C

Table C-2

ANOVA: MAC Pilots vs Other Air Force Pilots vs Non-rated Officers

WORK REPETITION

	Mean	SD	Subset	df	F
Variable 226				2, 11492	36.89***
MAC Pilots	4.20	1.59	2		
Other Pilots	4.32	1.54	2		
Non-rated	4.00	1.58	1		
Variable 227				2, 11527	75.78***
MAC Pilots	4.66	1.53	2		
Other Pilots	4.84	1.41	3		
Non-rated	4.41	1.53	1		

Note: Groups not in the same subset are significantly different at the .05 level.

***$p \leq .001 <$ **$p \leq .01 <$ *$p \leq .05$

Table C-3

ANOVA: MAC Pilots vs Other Air Force Pilots vs Non-rated Officers

JOB RELATED TRAINING

	Mean	SD	Subset	df	F
Variable 711				2, 9365	139.00***
MAC Pilots	4.73	1.49	2		
Other Pilots	5.13	1.38	3		
Non-rated	4.46	1.61	1		
Variable 712				2, 10425	145.31***
MAC Pilots	4.91	1.59	2		
Other Pilots	5.31	1.43	3		
Non-rated	4.61	1.76	1		

Note: Groups not in the same subset are significantly different at the .05 level.

***$p \leq .001 <$ **$p \leq .01 <$ *$p \leq .05$

Appendix C

Table C-4

ANOVA: MAC Pilots vs Other Air Force Pilots vs Non-rated Officers

NEED FOR ENRICHMENT

	Mean	SD	Subset	df	F
Variable 249				2, 11480	117.65***
MAC Pilots	5.29	1.43	1		
Other Pilots	5.36	1.30	1		
Non-rated	5.77	1.19	2		
Variable 250				2, 11530	6.57**
MAC Pilots	6.25	1.07	1		
Other Pilots	6.39	0.90	2		
Non-rated	6.44	0.91	2		
Variable 251				2, 11559	18.19***
MAC Pilots	6.04	1.08	1		
Other Pilots	6.17	1.05	1		
Non-rated	6.29	1.00	2		
Variable 252				2, 11544	2.29
MAC Pilots	6.14	1.02	1		
Other Pilots	6.27	0.92	2		
Non-rated	6.28	0.99	2		
Variable 253				2, 11457	16.18***
MAC Pilots	5.65	1.33	1		
Other Pilots	5.83	1.22	2		
Non-rated	5.96	1.20	2		

Note: Groups not in the same subset are significantly different at the .05 level.

***$p \leq .001$ < **$p \leq .01$ < *$p \leq .05$

Table C-5

ANOVA: MAC Pilots vs Other Air Force Pilots vs Non-rated Officers

WORK SUPPORT

	Mean	SD	Subset	df	F
Variable 206				2, 11381	220.43***
MAC Pilots	4.40	1.78	2		
Other Pilots	4.42	1.76	2		
Non-rated	3.59	1.74	1		
Variable 207				2, 11411	7.00***
MAC Pilots	4.99	1.39	1		
Other Pilots	4.98	1.26	1		
Non-rated	4.87	1.32	1		
Variable 208				2, 11469	3.98*
MAC Pilots	4.58	1.65	1		
Other Pilots	4.49	1.61	1		
Non-rated	4.60	1.71	1		

Note: Groups not in the same subset are significantly different at the .05 level.

***$p \leq .001 <$ **$p \leq .01 <$ *$p \leq .05$

APPENDIX C

Table C-6

ANOVA: MAC Pilots vs Other Air Force Pilots vs Non-rated Officers

MANAGEMENT/SUPERVISION

	Mean	SD	Subset	df	F
Variable 404				2, 11404	16.78***
MAC Pilots	5.05	1.65	1		
Other Pilots	5.42	1.40	2		
Non-rated	5.21	1.70	1		
Variable 405				2, 11441	3.99*
MAC Pilots	5.60	1.48	1		
Other Pilots	5.81	1.22	2		
Non-rated	5.73	1.46	1,2		
Variable 410				2, 11444	11.97***
MAC Pilots	5.26	1.62	1		
Other Pilots	5.66	1.35	2		
Non-rated	5.50	1.62	2		
Variable 411				2, 11426	9.44***
MAC Pilots	4.79	1.86	1		
Other Pilots	5.28	1.62	2		
Non-rated	5.16	1.81	2		
Variable 412				2, 11419	23.91***
MAC Pilots	4.79	1.66	1		
Other Pilots	5.31	1.41	3		
Non-rated	5.08	1.65	2		
Variable 413				2, 11446	13.64***
MAC Pilots	4.91	1.67	1		
Other Pilots	5.39	1.47	2		
Non-rated	5.21	1.73	2		
Variable 445				2, 11392	21.55***
MAC Pilots	4.44	1.66	1		
Other Pilots	4.99	1.52	3		
Non-rated	4.76	1.73	2		
Variable 416				2, 11416	8.80***
MAC Pilots	5.37	1.64	1		
Other Pilots	5.67	1.41	2		
Non-rated	5.52	1.66	1,2		

Note: Groups not in the same subset are significantly different at the .05 level.

***$p \leq .001 <$ **$p \leq .01 <$ *$p \leq .05$

Table C-7

ANOVA: MAC Pilots vs Other Air Force Pilots vs Non-rated Officers

SUPERVISORY COMMUNICATIONS CLIMATE

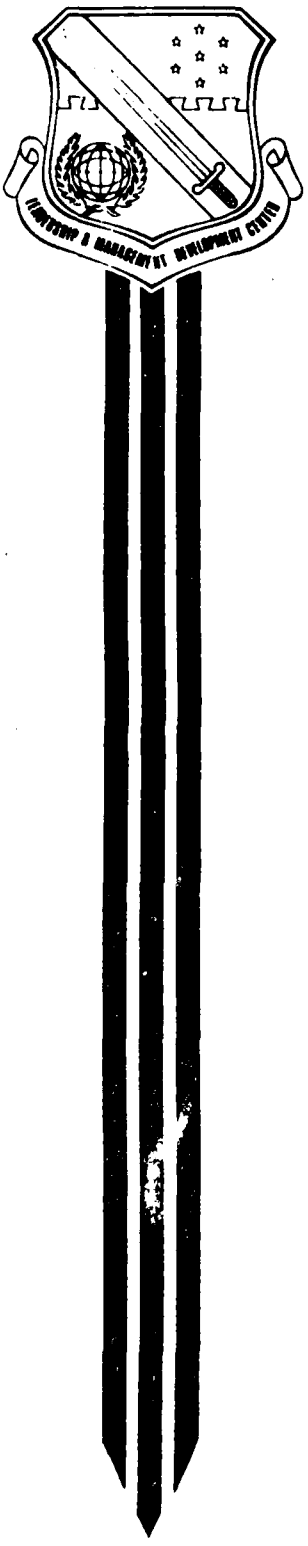
	Mean	SD	Subset	df	F
Variable 426				2, 11465	6.95**
MAC Pilots	5.19	1.72	1		
Other Pilots	5.60	1.47	2		
Non-rated	5.51	1.61	2		
Variable 428				2, 11364	12.91***
MAC Pilots	4.66	1.77	1		
Other Pilots	5.11	1.49	2		
Non-rated	4.94	1.72	2		
Variable 431				2, 11355	9.66***
MAC Pilots	4.30	1.72	1		
Other Pilots	4.72	1.54	2		
Non-rated	4.58	1.75	2		
Variable 433				2, 11419	11.29***
MAC Pilots	4.88	1.75	1		
Other Pilots	5.18	1.58	2		
Non-rated	4.99	1.81	1,2		
Variable 435				2, 11376	10.13***
MAC Pilots	4.50	1.61	1		
Other Pilots	4.85	1.46	2		
Non-rated	4.70	1.69	1,2		
Variable 436				2, 11125	14.52***
MAC Pilots	4.78	1.61	1		
Other Pilots	5.06	1.43	2		
Non-rated	4.85	1.71	1		
Variable 437				2, 11335	21.14***
MAC Pilots	4.29	1.80	1		
Other Pilots	4.82	1.62	3		
Non-rated	4.57	1.83	2		
Variable 442				2, 11387	16.96***
MAC Pilots	4.20	1.77	1		
Other Pilots	4.65	1.65	2		
Non-rated	4.42	1.85	1		

Note: Groups not in the same subset are significantly different at the .05 level.

***$p \leq .001 <$ **$p \leq .01 <$ *$p \leq .05$

APPENDIX

APPENDIX D: ORGANIZATIONAL ASSESSMENT PACKAGE SURVEY: FACTORS AND VARIABLES



ORGANIZATIONAL ASSESSMENT PACKAGE SURVEY

FACTORS

AND

VARIABLES

JANUARY 1986

LEADERSHIP AND MANAGEMENT DEVELOPMENT CENTER
AIR UNIVERSITY
Maxwell Air Force Base, Alabama 36112-5712

FACTORS AND VARIABLES OF THE ORGANIZATIONAL ASSESSMENT PACKAGE

The OAP is a 109-item survey questionnaire designed jointly by the Air Force Human Resources Laboratory and the Leadership and Management Development Center (LMDC) and is used to aid LMDC in its missions to: (a) conduct research on Air Force systemic issues using information in the OAP database, (b) provide leadership and management training, and (c) provide management consultation service to Air Force commanders upon request.

Allowable responses to the attitudinal items on the survey range from 1 (low) to 7 (high). The attitudinal items are grouped into 25 factors that address such areas as the job itself, management and supervision, communications, and performance in the organization. Each data record consists of 7 externally coded descriptors and 24 demographic items as well as the responses to the 93 attitudinal items.

The factors measured by the OAP are grouped into a systems model to assess three aspects of a work group: input, process, and output (adapted from McGrath's model).

Input. In LMDC's adaptation of the model, input is comprised of demographics, work itself, and job enrichment.

A. Demographics. Descriptive or background information about the respondents to the OAP survey.

B. Work Itself. The work itself has to do with the task properties (technologies) and environmental conditions of the job. It assesses the patterns of characteristics members bring to the group or organization, and patterns of differentiation and integration among position and roles. The following OAP factors measure the work itself:

806 - Job Desires (Need For Enrichment)
810 - Job Performance Goals
812 - Task Characteristics
813 - Task Autonomy
814 - Work Repetition
816 - Desired Repetitive Easy Tasks
823 - Job Related Training
Job Influences (not a statistical factor)

C. Job Enrichment. Measures the degree to which the job itself is interesting, meaningful, challenging, and responsible. The following OAP factors measure job enrichment:

800 - Skill Variety
801 - Task Identity
802 - Task Significance
804 - Job Feedback
806 - Need for Enrichment Index (Job Desires)
807 - Job Motivation Index
808 - QJI Total Score
809 - Job Motivation Index - Additive
825 - Motivation Potential Score

Work Group Process. The work group assesses the pattern of activity and interaction among the group members. The following OAP factors measures leadership and the work group process:

805 - Performance Barriers/Blockages (Work Support)
818 - Management and Supervision
819 - Supervisory Communications Climate
820 - Organizational Communications Climate
Work Interferences (not a statistical factor)
Supervisory Assistance (not a statistical factor)

Work Group Output. Measures task performance, group development, and effects on group members. Assesses the quantity and quality of task performance and alteration of the group's relation to the environment. Assesses changes in positions and role patterns, and in the development of norms. Assesses changes on skills and attitudes, and effects on adjustment. The following OAP factors measure the work group output:

811 - Pride
817 - Advancement/Recognition
821 - Work Group Effectiveness (Perceived Productivity)
822 - Job Related Satisfaction
824 - General Organizational Climate

EXTERNALLY CODED DESCRIPTORS

Batch Number

Julian Date of Survey

Major Command

Base Code

Consultation Method

Consultant Code

Survey Version

(Note: These items are concatenated to each data record during EDP processing.)

DEMOGRAPHIC ITEMS (NOT A STATISTICAL FACTOR)

Variable Number	Statement Number	Statement
-	-	Supervisor's Code
-	-	Work Group Code
-	-	Sex
-	-	Your age is
-	-	You are (officer, enlisted, GS, etc.)
-	-	Your pay grade is
-	-	Primary AFSC
-	-	Duty AFSC

(Note: The above items are on the response sheet.)

001	-	(Not used)
002	-	(Not used)
003	1	Total years in the Air Force: 1. Less than 1 year 2. More than 1 year, less than 2 years 3. More than 2 years, less than 3 years 4. More than 3 years, less than 4 years 5. More than 4 years, less than 8 years 6. More than 8 years
004	2	Total months in present career field: 1. Less than 1 month 2. More than 1 month, less than 6 months 3. More than 6 months, less than 12 months 4. More than 12 months, less than 18 months 5. More than 18 months, less than 24 months 6. More than 24 months, less than 36 months 7. More than 36 months
005	3	Total months at this station: 1. Less than 1 month 2. More than 1 month, less than 6 months 3. More than 6 months, less than 12 months 4. More than 12 months, less than 18 months 5. More than 18 months, less than 24 months 6. More than 24 months, less than 36 months 7. More than 36 months
006	4	Total months in present position: 1. Less than 1 month 2. More than 1 month, less than 6 months 3. More than 6 months, less than 12 months 4. More than 12 months, less than 18 months 5. More than 18 months, less than 24 months 6. More than 24 months, less than 36 months 7. More than 36 months
007	5	Your Ethnic Group is: 1. American Indian or Alaskan Native 2. Asian or Pacific Islander 3. Black, not of Hispanic Origin 4. Hispanic 5. White, not of Hispanic Origin 6. Other
008	11	Which of the following "best" describes your marital status? 0. Not married. 1. Married: Spouse is a civilian employed outside home. 2. Married: Spouse is a civilian employed outside home - geographically separated. 3. Married: Spouse not employed outside home. 4. Married: Spouse not employed outside home - geographically separated. 5. Married: Spouse is a military member. 6. Married: Spouse is a military member - geographically separated. 7. Single parent.

Variable Number	Statement Number	Statement
009	6	Your highest education level obtained is: 1. Non-high school graduate 2. High school graduate or GED 3. Less than two years college 4. Two years or more college 5. Bachelors Degree 6. Masters Degree 7. Doctoral Degree
010	7	Highest level of professional military education (residence or correspondence): 0. None or not applicable 1. NCO Orientation Course or USAF Supervisor Course (NCO Phase 1 or 2) 2. NCO Leadership School (NCO Phase 3) 3. NCO Academy (NCO Phase 4) 4. Senior NCO Academy (NCO Phase 5) 5. Squadron Officer School 6. Intermediate Service School (i.e., ACSC, AFSC) 7. Senior Service School (i.e., AWC, ICAF, NWC)
011	8	How many people do you directly supervise? 1. None 5. 4 to 5 2. 1 6. 6 to 8 3. 2 7. 9 or more 4. 3
012	9	For how many people do you write performance reports? 1. None 5. 4 to 5 2. 1 6. 6 to 8 3. 2 7. 9 or more 4. 3
013	10	Does your supervisor actually write your performance report? 1. Yes 2. No 3. Not sure

Variable Number	Statement Number	Statement
014	11	Your work requires you to work primarily: 1. Alone 2. With one or two people 3. As a small work group (3-5 people) 4. As a large work group (6 or more people) 5. Other
015	12	What is your usual work schedule? 1. Day shift, normally stable hours 2. Swing shift (about 1600-2400) 3. Mid shift (about 2400-0800) 4. Rotating shift schedule 5. Day or shift work with irregular/unstable hours 6. Frequent TDY/travel or frequently on-call to report to work 7. Crew schedule
016	13	How often does your supervisor hold group meetings? 1. Never 4. Weekly 2. Occasionally 5. Daily 3. Monthly 6. Continuously
017	14	How often are group meetings used to solve problems and establish goals? 1. Never 3. About half the time 2. Occasionally 4. All of the time
018	15	What is your aeronautical rating and current status? 1. Nonrated, not on aircrew 2. Nonrated, now on aircrew 3. Rated, in crew/operations job 4. Rated, in support job

Variable Number	Statement Number	Statement
019	16	Which of the following best describes your career or employment intentions? 1. Planning to retire in the next 12 months 2. Will continue in/with the Air Force as a career 3. Will most likely continue in/with the Air Force 4. May continue in/with the Air Force 5. Will most likely not make the Air Force a career 6. Will separate/terminate from the Air Force as soon as possible

NOTE: Variable 008, Statement 11 was added to the OAP on 19 Jan 80 and replaced variable 014 which appears on page 6. Although no longer used, Variable 014 is still shown because data collected from about 25,000 samples for this variable are still in the data base.

FACTORS

Each 800 series factor consists of two or more variables which correspond to statements in the OAP. A mean score can be derived for each factor except 805, 807, 808, 809 and 825 by using a "straight average." The formula for computing the exceptions is indicated.

FACTOR 800 - SKILL VARIETY: Measures the degree to which a job requires a variety of different tasks or activities in carrying out the work; involves the use of a number of different skills and talents of the worker; skills required are valued by the worker.

Variable Number	Statement Number	Statement
201	17	To what extent does your job require you to do many different things, using a variety of your talents and skills?
212	29	To what extent does your job require you to use a number of complex skills?

FACTOR 801 - TASK IDENTITY: Measures the degree to which the job requires completion of a "whole" and identifiable piece of work from beginning to end.

Variable Number	Statement Number	Statement
202	18	To what extent does your job involve doing a whole task or unit of work?
211	28	To what extent does your job provide you with a chance to finish completely the piece of work you have begun?

FACTOR 802 - TASK SIGNIFICANCE: Measures the degree to which the job has a substantial impact on the lives or work of others; the importance of the job.

Variable Number	Statement Number	Statement
203	19	To what extent is your job significant in that it affects others in some important way?
210	27	To what extent does doing your job well affect a lot of people?

FACTOR 803 (NOT USED)

FACTOR 804 - JOB FEEDBACK: Measures the degree to which carrying out the work activities required by the job results in the worker obtaining clear and direct information about job outcomes or information on good and poor performance.

Variable Number	Statement Number	Statement
272	22	To what extent are you able to determine how well you are doing your job without feedback from anyone else?
209	26	To what extent does your job provide the chance to know for yourself when you do a good job, and to be responsible for your own work?

FACTOR 805 - WORK SUPPORT: Measures the degree to which work performance is hindered by additional duties, details, inadequate tools, equipment, or work space.

Variable Number	Statement Number	Statement
206	23	To what extent do additional duties interfere with the performance of your primary job?
207	24	To what extent do you have adequate tools and equipment to accomplish your job?
208	25	To what extent is the amount of work space provided adequate?

Formula (8-206+207+208)/3

FACTOR 806 - NEED FOR ENRICHMENT INDEX (JOB DESIRES): Has to do with job related characteristics (autonomy, personal growth, use of skills, etc.) that the individual would like in a job.

Variable Number	Statement Number	Statement
(In my job, I would like to have the characteristics described--from "not at all" to "an extremely large amount")		
249	51	Opportunities to have independence in my work.
250	52	A job that is meaningful.
251	53	The opportunity for personal growth in my job.
252	54	Opportunities in my work to use my skills.
253	55	Opportunities to perform a variety of tasks.

FACTOR 807 - JOB MOTIVATION INDEX: A composite index derived from the six job characteristics that reflects the overall "motivating potential" of a job; the *degree to which a job will prompt high internal* work motivation on the part of job encumbents.

Index is computed using the following factors:

800	Skill variety
801	Task identity
802	Task significance
805	*Performance barriers/blockages*
813	Task autonomy
804	Job feedback

Formula ((800+801+802+805)/4)*813*804

FACTOR 808 - OJI TOTAL SCORE: Assesses one's perception of motivation provided by his or her job. This factor is a variation of a scale employed by other job motivation theorists.

Score is computed using the variables in the following formula:

Formula (V201+V202+V203+V270+V271+V272
+8-V206+V207+V208+V209+V210
+V211+V212+V213)

FACTOR 809 - JOB MOTIVATION INDEX ---- ADDITIVE: This factor is a variation of a scale employed by other job motivation theorists.

Index is computed using the following factors:

800	Skill variety
801	Task identity
802	Task significance
805	Performance barriers/blockages
813	Task autonomy
804	Work repetition

Formula ((800+801+802+805)/4)+813+804

FACTOR 810 - JOB PERFORMANCE GOALS: Measures the extent to which job performance goals are clear, specific, realistic, understandable, and challenging.

Variable Number	Statement Number	Statement
217	34	To what extent do you know exactly what is expected of you in performing your job?
218	35	To what extent are your job performance goals difficult to accomplish?
273	36	To what extent are your job performance goals clear?
274	37	To what extent are your job performance goals specific?
221	38	To what extent are your job performance goals realistic?

FACTOR 811 - PRIDE: Measures the pride in one's work.

Variable Number	Statement Number	Statement
215	32	To what extent are you proud of your job?
275	46	To what extent does your work give you a feeling of pride?

FACTOR 812 - TASK CHARACTERISTICS: A combination of skill variety, task identity, task significance, and job feedback designed to measure several aspects of one's job.

Variable Number	Statement Number	Statement
201	17	To what extent does your job require you to do many different things, using a variety of your talents and skills?
202	18	To what extent does your job involve doing a whole task or unit of work?
203	19	To what extent is your job significant, in that it affects others in some important way?
272	22	To what extent are you able to determine how well you are doing your job without feedback from anyone else?
209	26	To what extent does your job provide the chance to know for yourself when you do a good job, and to be responsible for your own work?
210	27	To what extent does doing your job well affect a lot of people?
211	28	To what extent does your job provide you with a chance to finish completely the piece of work you have begun?
212	29	To what extent does your job require you to use a number of complex skills?

FACTOR 813 - TASK AUTONOMY: Measures the degree to which the job provides freedom to do the work as one sees fit; discretion in scheduling, decision making, and means for accomplishing a job.

Variable Number	Statement Number	Statement
270	20	To what extent does your job provide a great deal of freedom and independence in scheduling your work?
271	21	To what extent does your job provide a great deal of freedom and independence in selecting your own procedures to accomplish it?
213	30	To what extent does your job give you freedom to do your work as you see fit?
214	31	To what extent are you allowed to make the major decisions required to perform your job well?

FACTOR 814 - WORK REPETITION: Measures the extent to which one performs the same tasks or faces the same type of problems in his or her job on a regular basis.

Variable Number	Statement Number	Statement
226	39	To what extent do you perform the same tasks repeatedly within a short period of time?
227	40	To what extent are you faced with the same type of problem on a weekly basis?

FACTOR 815 (NOT USED)

FACTOR 816 - DESIRED REPETITIVE EASY TASKS: Measures the extent to which one desires his or her job involve repetitive tasks or tasks that are easy to accomplish.

Variable Number	Statement Number	Statement
255	56	A job in which tasks are repetitive.
258	57	A job in which tasks are relatively easy to accomplish.

FACTOR - JOB INFLUENCES (NOT A STATISTICAL FACTOR):

Variable Number	Statement Number	Statement
216	33	To what extent do you feel accountable to your supervisor in accomplishing your job?
238	42	To what extent do co-workers in your work group maintain high standards of performance?

FACTOR 817 - ADVANCEMENT/RECOGNITION: Measures one's awareness of advancement and recognition, and feelings of being prepared (i.e., learning new skills for promotion).

Variable Number	Statement Number	Statement
234	41	To what extent are you aware of promotion/advancement opportunities that affect you?
239	43	To what extent do you have the opportunity to progress up your career ladder?

240	44	To what extent are you being prepared to accept increased responsibility?
241	45	To what extent do people who perform well receive recognition?
276	47	To what extent do you have the opportunity to learn skills which will improve your promotion potential?

FACTOR 818 - MANAGEMENT and SUPERVISION (A): Measures the degree to which the worker has high performance standards and good work procedures. Measures support and guidance received, and the overall quality of supervision.

Variable Number	Statement Number	Statement
404	58	My supervisor is a good planner.
405	59	My supervisor sets high performance standards.
410	60	My supervisor encourages teamwork.
411	61	My supervisor represents the group at all times.
412	62	My supervisor establishes good work procedures.
413	63	My supervisor has made his responsibilities clear to the group.
445	64	My supervisor fully explains procedures to each group member.
416	65	My supervisor performs well under pressure.

FACTOR - MANAGEMENT and SUPERVISION (B): (NOT A STATISTICAL FACTOR)

Variable Number	Statement Number	Statement
424	66	My supervisor takes time to help me when needed.
434	71	My supervisor lets me know when I am doing a poor job.
439	75	When I need technical advice, I usually go to my supervisor.

FACTOR 819 - SUPERVISORY COMMUNICATIONS CLIMATE: Measures the degree to which the worker perceives that there is good rapport with supervisors, that there is a good working environment, that innovation for task improvement is encouraged, and that rewards are based upon performance.

Variable Number	Statement Number	Statement
426	67	My supervisor asks members for their ideas on task improvements.
428	68	My supervisor explains how my job contributes to the overall mission.
431	69	My supervisor helps me set specific goals.
433	70	My supervisor lets me know when I am doing a good job.
435	72	My supervisor always helps me improve my performance.
436	73	My supervisor insures that I get job related training when needed.
437	74	My job performance has improved due to feedback received from my supervisor.
442	76	My supervisor frequently gives me feedback on how well I am doing my job.

FACTOR 820 - ORGANIZATIONAL COMMUNICATIONS CLIMATE: Measures the degree to which the worker perceives that there is an open communications environment in the organization, and that adequate information is provided to accomplish the job.

Variable Number	Statement Number	Statement
300	82	Ideas developed by my work group are readily accepted by management personnel above my supervisor.
301	83	My organization provides all the necessary information for me to do my job effectively.
302	84	My organization provides adequate information to my work group.
303	85	My work group is usually aware of important events and situations.
304	86	My complaints are aired satisfactorily.
309	91	The information in my organization is widely shared so that those needing it have it available.

314	96	My organization has clear-cut goals.
317	99	The goals of my organization are reasonable.
318	100	My organization provides accurate information to my work group.

FACTOR 821 - WORK GROUP EFFECTIVENESS: Measures one's view of the quantity, quality, and efficiency of work generated by his or her work group.

Variable Number	Statement Number	Statement
259	77	The quantity of output of your work group is very high.
260	78	The quality of output of your work group is very high.
261	79	When high priority work arises, such as short suspenses, crash programs, and schedule changes, the people in my work group do an outstanding job in handling these situations.
264	80	Your work group always gets maximum output from available resources (e.g., personnel and material).
265	81	Your work group's performance in comparison to similar work groups is very high.

FACTOR - WORK INTERFERENCES (NOT A STATISTICAL FACTOR): Identifies things that impede an individual's job performance.

Variable Number	Statement Number	Statement
277	48	To what extent do you have the necessary supplies to accomplish your job?
278	49	To what extent do details (task not covered by primary or additional duty descriptions) interfere with the performance of your primary job?
279	50	To what extent does a bottleneck in your organization seriously affect the flow of work either to or from your group?

FACTOR 822 - JOB RELATED SATISFACTION: Measures the degree to which the worker is generally satisfied with factors surrounding the job.

Variable Number	Statement Number	Statement
705	101	Feeling of Helpfulness The chance to help people and improve their welfare through the performance of my job. The importance of my job performance to the welfare of others.
709	102	Co-worker Relationships My amount of effort compared to the effort of my co-workers, the extent to which my co-workers share the load, and the spirit of teamwork which exists among my co-workers.
710	103	Family Attitude Toward Job The recognition and the pride my family has in the work I do.
717	106	Work Schedule My work schedule; flexibility and regularity of my work schedule; the number of hours I work per week.
718	107	Job Security
719	108	Acquired Valuable Skills The chance to acquire valuable skills in my job which prepare me for future opportunities
723	109	My Job as a Whole

FACTOR 823 - JOB RELATED TRAINING: Measures the extent to which one is satisfied with on-the-job and technical training received.

Variable Number	Statement Number	Statement
711	104	On-the-Job Training (OJT) The OJT instructional methods and instructors' competence.
712	105	Technical Training (Other than OJT) The technical training I have received to perform my current job.

FACTOR 824 - GENERAL ORGANIZATIONAL CLIMATE: Measures the individual's perception of his or her organizational environment as a whole (i.e. spirit of teamwork, communications, organizational pride, etc.).

Variable Number	Statement Number	Statement
305	87	My organization is very interested in the attitudes of the group members toward their jobs.
306	88	My organization has a very strong interest in the welfare of its people.
307	89	I am very proud to work for this organization.
308	90	I feel responsible to my organization in accomplishing its mission.
310	92	Personnel in my unit are recognized for outstanding performance.
311	93	I am usually given the opportunity to show or demonstrate my work to others.
312	94	There is a high spirit of teamwork among my co-workers.
313	95	There is outstanding cooperation between work groups of my organization.
315	97	I feel motivated to contribute my best efforts to the mission of my organization.
316	98	My organization rewards individuals based on performance.

FACTOR 825 - MOTIVATION POTENTIAL SCORE: This factor is another variation of a scale employed by other job motivation theorists. The score ranges between 1 and 343 with 109 being the Air Force average. Low scores indicate a poorly motivating job. Score is computed using the following factors:

800	Skill variety
801	Task identity
802	Task significance
804	Job feedback
813	Task autonomy

Formula [(800+801+802)/3)*813*804

VARIABLES

Variable Number	Factor	Statement Number	Statement
201	800/812	17	To what extent does your job require you to do many different things, using a variety of your talents and skills?
202	801/812	18	To what extent does your job involve doing a whole task or unit of work?
203	802/812	19	To what extent is your job significant, in that it affects others in some important way?
204 & 205	--	--	(Not used)
206	805	23	To what extent do additional duties interfere with the performance of your primary job?
207	805	24	To what extent do you have adequate tools and equipment to accomplish your job?
208	805	25	To what extent is the amount of work space provided adequate?
209	804/812	26	To what extent does your job provide the chance to know for yourself when you do a good job, and to be responsible for your own work?
210	802/812	27	To what extent does doing your job well affect a lot of people?
211	801/812	28	To what extent does your job provide you with a chance to finish completely the piece of work you have begun?
212	800/812	29	To what extent does your job require you to use a number of complex skills?

Variable Number	Factor	Statement Number	Statement
213	813	30	To what extent does your job give you freedom to do your work as you see fit?
214	813	31	To what extent are you allowed to make the major decisions required to perform your job well?
215	811	32	To what extent are you proud of your job?
216*	--	33	To what extent do you feel accountable to your supervisor in accomplishing your job?
217	810	34	To what extent do you know exactly what is expected of you in performing your job?
218	810	35	To what extent are your job performance goals difficult to accomplish?
219 & 220	--	--	(Not used)
221	810	38	To what extent are your job performance goals realistic?
222-225	--	--	(Not used)
226	814	39	To what extent do you perform the same tasks repeatedly within a short period of time?
227	814	40	To what extent are you faced with the same type of problem on a weekly basis?

* This variable is an element of "job influences" (not a statistical factor).

Variable Number	Factor	Statement Number	Statement
228-233	--	--	(Not used)
234	817	41	To what extent are you aware of promotion/advancement opportunities that affect you?
235-237	--	--	(Not used)
238*	--	42	To what extent do co-workers in your work group maintain high standards of performance?
239	817	43	To what extent do you have the opportunity to progress up your career ladder?
240	817	44	To what extent are you being prepared to accept increased responsibility?
241	817	45	To what extent do people who perform well receive recognition?
242-248	--	--	(Not used)
249	806	51	Opportunities to have independence in my work?
250	806	52	A job that is meaningful.
251	806	53	The opportunity for personal growth in my job.
252	806	54	Opportunities in my work to use my skills.
253	806	55	Opportunities to perform a variety of tasks.
254	--	--	(Not used)
255	816	56	A job in which tasks are repetitive.

* This variable is an element of "Job influences" (not a statistical factor).

Variable Number	Factor	Statement Number	Statement
256 & 257	--	--	(Not used)
258	816	57	A job in which tasks are relatively easy to accomplish.
259	821	77	The quantity of output of your work group is very high.
260	821	78	The quality of output of your work group is very high.
261	821	79	When high priority work arises, such as short suspenses, crash programs, and schedule changes, the people in my work group do an outstanding job in handling these situations.
262 & 263	--	--	(Not used)
264	821	80	Your work group always gets maximum output from available resources (e.g., personnel and material).
265	821	81	Your work group's performance in comparison to similar work groups is very high.
266-269	--	--	(Not used)
270	813	20	To what extent does your job provide a great deal of freedom and independence in scheduling your work?
271	813	21	To what extent does your job provide a great deal of freedom and independence in selecting your own procedures to accomplish it?
272	804/812	22	To what extent are you able to determine how well you are doing your job without feedback from anyone else?

Variable Number	Factor	Statement Number	Statement
273	810	36	To what extent are your job performance goals clear?
274	810	37	To what extent are your job performance goals specific?
275	811	46	To what extent does your work give you a feeling of pride?
276	817	47	To what extent do you have the opportunity to learn skills which will improve your promotion potential?
277**	--	48	To what extent do you have the necessary supplies to accomplish your job?
278**	--	49	To what extent do details (task not covered by primary or additional duty descriptions) interfere with the performance of your primary job?
279**	--	50	To what extent does a bottleneck in your organization seriously affect the flow of work either to or from your group?
280-299	--	--	(Not used)
300	820	82	Ideas developed by my work group are readily accepted by management personnel above my supervisor.
301	820	83	My organization provides all the necessary information for me to do my job effectively.
302	820	84	My organization provides adequate information to my work group.

** These variables are elements of "work interferences" (not a statistical factor).

Variable Number	Factor	Statement Number	Statement
303	820	85	My work group is usually aware of important events and situations.
304	820	86	My complaints are aired satisfactorily.
305	824	87	My organization is very interested in the attitudes of the group members toward their jobs.
306	824	88	My organization has a very strong interest in the welfare of its people.
307	824	89	I am very proud to work for this organization.
308	824	90	I feel responsible to my organization in accomplishing its mission.
309	820	91	The information in my organization is widely shared so that those needing it have it available.
310	824	92	Personnel in my unit are recognized for outstanding performance.
311	824	93	I am usually given the opportunity to show or demonstrate my work to others.
312	824	94	There is a high spirit of teamwork among my co-workers.
313	824	95	There is outstanding cooperation between work groups of my organization.

Variable Number	Factor	Statement Number	Statement
314	820	96	My organization has clear-cut goals.
315	824	97	I feel motivated to contribute my best efforts to the mission of my organization.
316	824	98	My organization rewards individuals based on performance.
317	820	99	The goals of my organization are reasonable.
318	820	100	My organization provides accurate information to my work group.
319-403	--	--	(Not used)
404	818	58	My supervisor is a good planner.
405	818	59	My supervisor sets high performance standards.
406-409	--	--	(Not used)
410	818	60	My supervisor encourages teamwork.
411	818	61	My supervisor represents the group at all times.
412	818	62	My supervisor establishes good work procedures.
413	818	63	My supervisor has made his responsibilities clear to the group.
414 & 415	--	--	(Not used)
416	818	65	My supervisor performs well under pressure.
417-423	--	--	(Not used)
424***	--	66	My supervisor takes time to help me when needed.
425	--	--	(Not used)

*** This variable is an element of "supervisory assistance" (not a statistical factor).

Variable Number	Factor	Statement Number	Statement
426	819	67	My supervisor asks members for their ideas on task improvements.
427	--	--	(Not used)
428	819	68	My supervisor explains how my job contributes to the overall mission.
429 & 430	--	--	(Not used)
431	819	69	My supervisor helps me set specific goals.
432	--	--	(Not used)
433	819	70	My supervisor lets me know when I am doing a good job.
434***	--	71	My supervisor lets me know when I am doing a poor job.
435	819	72	My supervisor always helps me improve my performance.
436	819	73	My supervisor insures that I get job related training when needed.
437	819	74	My job performance has improved due to feedback received from my supervisor.
438	--	--	(Not used)
439***	--	75	When I need technical advice, I usually go to my supervisor.
440 & 441	--	--	(Not used)
442	819	76	My supervisor frequently gives me feedback on how well I am doing my job.
443 & 444	--	--	(Not used)
445	818	64	My supervisor fully explains procedures to each group member.
446-704	--	--	(Not used)

*** These variables are elements of "supervisory assistance" (not a statistical factor).

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Variable Number	Factor	Statement Number	Statement
705	822	101	Feeling of Helpfulness The chance to help people and improve their welfare through the performance of my job. The importance of my job performance to the welfare of others.
706-708	--	--	(Not used)
709	822	102	Co-worker Relationships My amount of effort compared to the effort of my co-workers, the extent to which my co-workers share the load, and the spirit of teamwork which exists among my co-workers.
710	822	103	Family Attitude Toward Job The recognition and the pride my family has in the work I do.
711	823	104	On-the-Job Training (OJT) The OJT instructional methods and instructors' competence.
712	823	105	Technical Training (Other than OJT) The technical training I have received to perform my current job.
713-716	--	--	(Not used)
717	822	106	Work Schedule My work schedule; flexibility and regularity of my work schedule; the number of hours I work per week.
718	822	107	Job Security
719	822	108	Acquired Valuable Skills The chance to acquire valuable skills in my job which prepare me for future opportunities.
720-722	--	--	(Not used)
723	822	109	My Job as a Whole
724-999	--	--	(Not used)

END

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